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HAZARDOUS WASTE PART B PERMIT APPLICATION

**MacDERMID, INC.
526 HUNTINGDON AVENUE
WATERBURY, CONNECTICUT**

VOLUME I

hrp associates inc.
engineering & geology

November 8, 1988

Mr. John Hackler
U.S. Environmental Protection Agency
Region I - Waste Management Division
90 Canal Street - HER-CAN-6
Boston, Massachusetts 02114

ATTN: Connecticut Waste Permit Section
(HER-CAN6)

RE: PART B PERMIT APPLICATION FOR MACDERMID, INC.
526 HUNTINGDON AVENUE, WATERBURY, CONNECTICUT
EPA I.D. NUMBER CTD 001164599
(HRP #PB-MAN-Ø)

Dear Mr. Dews:

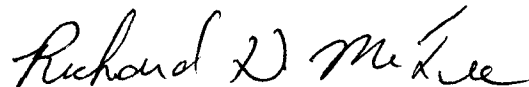
On behalf of MacDermid, Inc., HRP Associates, Inc. has prepared and enclosed for your review a copy of the Part B Permit Application for the facility located at 526 Huntingdon Avenue, Waterbury, Connecticut.

This application has been prepared in accordance with the regulatory requirements included in 40 CFR, Sections 264 and 270.

If you have any questions or comments, please do not hesitate to contact me.

Sincerely yours,

HRP ASSOCIATES, INC.



Richard D. McFee
Project Manager

cc: Cherrie Gillis, MacDermid, Inc.
Frank Cruice, MacDermid, Inc.

Enclosures
/dd

CTD 001 164 599

RCRA RECORDS CENTER
FACILITY MACDERMID, INC.
I.D. NO. CTD 001 164 599
FILE LOC. 1 10
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HAZARDOUS WASTE PART B PERMIT APPLICATION

**MacDERMID, INC.
526 HUNTINGDON AVENUE
WATERBURY, CONNECTICUT**

VOLUME I

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HAZARDOUS WASTE

PART B PERMIT APPLICATION

MACDERMID, INC.
526 HUNTINGDON AVENUE
WATERBURY, CONNECTICUT

1.0 INTRODUCTION

1.1 General Background

MacDermid, Inc. is located on two parcels of property north and south of Huntingdon Avenue in the Fairmont section of Waterbury, Connecticut (See Figure 1.1). The southern parcel is approximately 11 acres in area which houses the manufacturing and laboratory facilities and offices. The northern parcel is approximately 42 acres in size and is mostly undeveloped except for MacDermid's corporate office, located on the eastern portion.

The principle business of MacDermid, Inc. is the blending, or compounding, of chemical materials used in the metal finishing, plating on plastics, electronics, micro electronics, and surface treatment industries. As an adjunct to the principle business, MacDermid reprocesses used chemicals received from their customers for recycling. As a result of these operations, hazardous wastes are generated, stored temporarily on site, and/or recycled. Ultimately all hazardous wastes are removed from the site by certified waste haulers and disposed of at permitted hazardous waste disposal facilities.

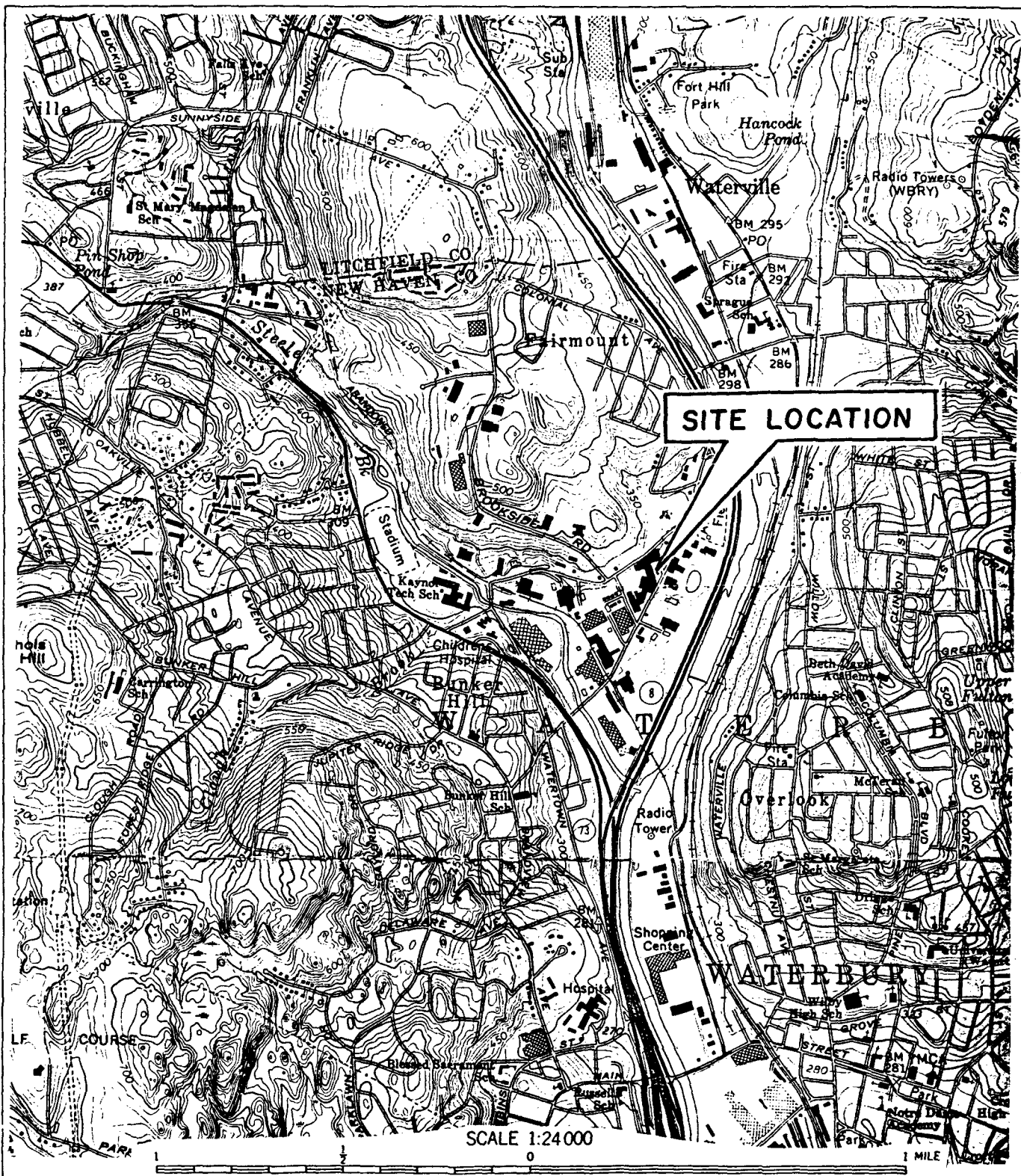
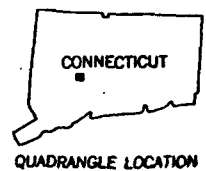


FIGURE 1.1
SITE LOCATION MAP
MAC DERMID, INC.
526 HUNTINGDON AVE.
WATERBURY, CT.



hrp associates inc.

Certain electronics, metal finishing, micro electronics, plating on plastics and surface treatment chemicals received from MacDermid's customers are defined as "used" or "spent", and are recyclable since these materials, due to contamination, can no longer serve the purpose for which they were produced without processing. In addition, since the used materials are known to exhibit hazardous characteristics such as pH >12.5, E.P. toxicity lead concentration greater than 5.0 mg/l, etc., and are processed by MacDermid to recover a useable product (regenerated), such materials are further defined as hazardous wastes.

As defined under 40 CFR Section 261.6, the hazardous wastes recycled at MacDermid, Inc. are subjected to the following regulatory requirements:

- (1) 40 CFR Part 262 Standards for Generators of Hazardous Waste.
- (2) 40 CFR Part 263 Standards for Transporters of Hazardous Waste.
- (3) 40 CFR Parts 264 (Subparts A through L), 124, 266, 268, and 270 Standards for Treatment, Storage and Disposal Facilities of Hazardous Waste.

The recycling operation process itself, however, is exempt from all current Federal and State hazardous waste regulations.

Provided in the subsequent sections of this permit application are detailed plans and management programs describing the facilities and operations associated with the:

- storage and transportation of recyclable hazardous wastes up to the point of their recycling process; and
- storage of hazardous wastes generated on-site up to the point they are removed off-site by a licensed hauler for final treatment/disposal.

For easy reference, each section in this application has been noted with the Section number from the Code of Federal Regulations (CFR) Sections 264 and 270.

1.2 EPA Identification Number [40 CFR 264.11]

MacDermid, Inc.'s EPA Identification Number is CTD 001164599. The original Part A application was submitted on November 13, 1980. A copy of the latest Part A application (March 19, 1985) is provided as Appendix A.

1.3 Current Permit Status

A copy of MacDermid, Inc.'s revised Part A application is enclosed in Appendix B of this application.

The changes/modifications made to the revised Part A Application are as follows:

Form 3

- o Process Design Capacity
- o Estimated Annual Quantity of Waste
- o Certification
- o Facility Drawing

1.4 Required Notices [40 CFR 264.12]

In accordance with 40 CFR 264.12, MacDermid, Inc., will perform the following as required:

- Notify the Regional Administrator, in writing, at least four weeks in advance of the date the hazardous waste from a foreign source is expected to arrive at the facility;
- inform the generator, in writing, that MacDermid, Inc. has the appropriate permit(s) for, and will accept, the waste the generator is shipping; and
- notify the new owner or operator, in writing, of the requirements of 40 CFR 264 and 270 before transferring ownership or operation of the MacDermid facility during the operating life.

1.5 Releases From Solid Waste Management Units

[40 CFR 264 Subpart F]

Not applicable to MacDermid, Inc.

1.6 Surface Impoundments [40 CFR 264 Subpart K]

Not applicable to MacDermid, Inc.

1.7 Waste Piles [40 CFR 264 Subpart L]

Not applicable to MacDermid, Inc.

1.8 Land Treatment [40 CFR 264 Subpart M]

Not applicable to MacDermid, Inc.

1.9 Landfills [40 CFR 264 Subpart N]

Not applicable to MacDermid, Inc.

1.10 Incinerators [40 CFR 264 Subpart O]

Not applicable to MacDermid, Inc.

2.0 GENERAL FACILITY DESCRIPTION [40 CFR 270.14(b)(1)]

2.1 General Operation

The MacDermid, Inc. facility located at 526 Huntingdon Avenue in Waterbury, Connecticut manufactures specialty chemicals for the metal finishing electronics, micro electronics, plating on plastics and surface treatment industry. For certain specialty chemical products' (e.g. solder strippers, copper/ammonia solution, etc.) MacDermid, Inc. also provides a recycling service for their customers. Under this recycling operation, the used metal finishing chemicals are managed as follows:

- o shipped to MacDermid, Inc. in tank trucks (bulk) or in containers for recycling;
- o bulk materials are transferred to the waste storage tanks and containers are transferred to the main container storage area or the micro storage area for temporary storage;
- o all used materials are tested to verify the contents of the containers and tank trucks.
- o used materials are transferred to the recycling process operation to be reclaimed or shipped off-site for reclamation;
- o recycled materials are temporarily stored on site prior to being returned/resold to customers for reuse.

As a result of the manufacturing and recycling operations performed at the 526 Huntingdon Avenue facility, MacDermid, Inc. is classified as both a Generator and a Storer of hazardous waste. However, as indicated under Section 1.1 of the application, the recycling

process itself is exempted from Federal and State hazardous waste regulations and therefore is not described in this permit application.

2.2 Facility Details

At the 526 Huntingdon Avenue facility, the following facilities are employed by MacDermid Inc. to store hazardous waste generated on-site and used metal finishing chemicals received from customers before recycling:

- o main container storage area;
- o flammable material storage area;
- o micro storage area;
- o metal hydroxide/sulfide sludge storage area; and
- o waste storage tanks.

The general locations of all storage areas are shown on Figure 2.1.

2.1.1 Main Container Storage Areas

To store both the bulk of used metal finishing chemicals received for recycling; and the hazardous wastes generated on-site; MacDermid, Inc. has provided a container storage area designed to safely handle 77,000 gallons of aqueous material. This rectangular shaped area, which is located on the north side of the East Aurora Street facility, measures approximately 93' long by 42' wide.

**US EPA New England
RCRA Document Management System
Image Target Sheet**

RDMS Document ID # 100852

Facility Name: MACDERMID INC

Facility ID#: CTD001164599

Phase Classification: R-1B

Purpose of Target Sheet:

☒ **Oversized (in Site File)** ☐ **Oversized (in Map Drawer)**

☐ **Page(s) Missing (Please Specify Below)**

☐ **Privileged** ☐ **Other (Provide Purpose Below)**

Description of Oversized Material, if applicable:

FIGURE 2.1: FACILITY LAYOUT

☒ **Map** ☐ **Photograph** ☐ **Other (Specify Below)**

*** Please Contact the EPA New England RCRA Records Center to View This Document ***

Secondary containment is provided within this storage area by means of an epoxy coated concrete floor, building walls, 3½" concrete berm, and a collection sump located in the northern portion of the storage area.

The collection sump which is connected to the two (2) floor drains located within this storage area has a storage capacity of 200 gallons and is equipped with a manually operated control valve. From this sump, all collected waste after visual/chemical inspection by MacDermid personnel is either discharged to the industrial waste water treatment tank or transferred to 55 gallon drums for off-site disposal. The control valve in the sump is kept closed at all times except during transfer of the accumulated waste to the industrial waste water treatment system.

Containers (55 gallon drums and 13 gallon glass containers) within this area are stored on 43"x43" wooden pallets a maximum of five (5) high on the storage racks. The storage racks which are stationed along the side walls and stationed two deep within the middle of the storage area are separated by a minimum of 6'9" wide aisles to allow personnel and equipment

access for inspection and container handling. The 330 gallon storage totes (a maximum of 20) are stored at the north and south ends of this area.

This storage area is described in detail in Sections 4.0 and 9.0 of this application.

2.1.2 Flammable Material Storage Area

All flammable wastes (flash point < 140° F) generated on-site are stored within the flammable material storage area. This area, which is located within the northeastern section of the Gear Street facility, is designed to store sixteen (16), 55 gallon drums or 880 gallons of flammable waste. Dimensions of this storage area are 8'1" by 10'0".

Secondary containment is provided by an epoxy coated concrete floor and epoxy coated 4"x4" angle iron berms. The angle iron berms, which completely surround this storage area, are anchored to the concrete floor with 1/2" steel studs.

Located outside the flammable storage area is a floor trench used to collect any material spilled/leaked from the area's process operation. All waste collected within the trench is discharged to the industrial waste treatment system.

To prevent contact with any spilled/leaked material, all containers within this area are presently stored on wooden pallets. MacDermid, Inc. intends to replace the wooden pallets in the near future with steel or plastic grating.

To allow for inspection, the containers are stored a maximum of two deep and the two rows are separated by a two (2) foot wide aisle.

This area is described in detail in Sections 4.0 and 9.0 of this application.

2.1.3 Micro Storage Area

The micro storage area which is located in the south end of the Gear Street building is used primarily to store wastes that have been designated for recycling. This storage area which measures 24'x24' is designed to store a maximum of 6,710 gallons of waste material. The type and number of containers to be stored in this area include 92, 55 gallon drums and 5, 330 gallon storage totes.

Secondary containment is provided within this area by means of an epoxy coated concrete floor, building wall, and epoxy coated 3"x3" angle iron berms. The angle iron berms are anchored to the concrete floor with 3/8" steel studs. To prevent contact with any spilled/

leaked material, the 55 gallon drums are stored on wooden pallets. The storage totes are stored directly on the concrete floor.

To allow for inspection, the 55 gallon drums which are stored a maximum of two deep and three high are separated by a 2.0'-3.5' wide aisles. The storage totes which are stored only one high along the east wall are also provided with 2.0'-3.5' wide aisles.

This storage area is described in detail in Sections 4.0 and 9.0 of this application.

2.1.4 Metal Hydroxide/Sulfide Sludge Storage Area

The dewatered metal hydroxide/sulfide sludge generated from MacDermid's industrial waste water treatment system is stored on-site in a single 26 cubic yard roll-off equipped with a drop-in liner. This roll-off is housed in the building located directly south of the Huntingdon Avenue gate and is stored on a concrete floor. No secondary containment provisions are provided, since the waste does not contain any free liquids.

This storage area is described in detail in Sections 4.0 and 9.0 of this application.

2.1.5 Waste Storage Tanks

All bulk waste generated and received at MacDermid, Inc. is stored on-site within four

(4) above ground storage tanks. These tanks, which are located on the west side of the Huntingdon Avenue building, have a total storage capacity of 29,000 gallons.

Secondary containment for these tanks is provided by an epoxy coated concrete floor, building walls and a 2'-7' high block wall located at both entrance ways. The floor trenches located within this area lead to a single floor drain which discharges directly to the industrial waste water treatment system. All wastes stored within these tanks are designated for recycling. Provided in Sections 4.0, 9.0, and 12.0 of this application are details on the operation and construction of the storage tanks and storage area.

2.3 Facility Operation

At MacDermid, Inc.'s 526 Huntingdon Avenue facility in Waterbury, Connecticut all waste streams generated on-site and received from customers are stored in either: containers (13 gallon glass containers, 55 gallon plastic and steel drums, and 330 gallon circular and cube storage totes); or in above ground FRP storage tanks, prior to being recycled or shipped off-site for final

treatment/disposal. Shown on Figure 2.2 are drawings of the storage totes which are designed for fork-lift handling. The cube storage totes which are contained within a steel cage are designed for two (2) high storage.

The specific procedures followed by MacDermid for the waste streams managed in containers and tanks are provided in Sections 2.3.1 and 2.3.2, respectively.

2.3.1 Containers

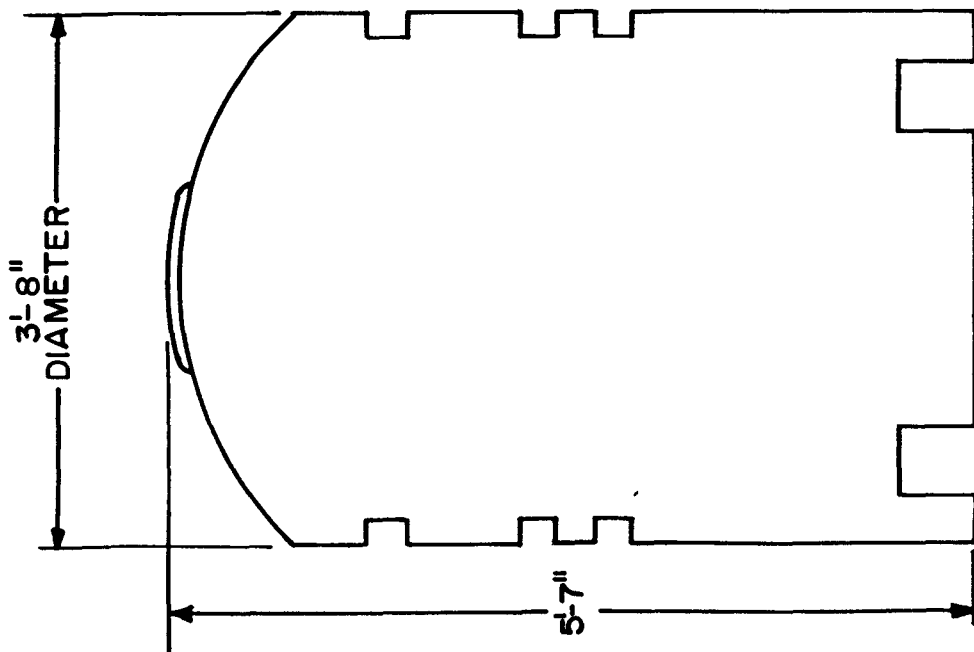
To minimize the potential of hazardous waste constituents release to the environment or threatening human health, all container storage areas are inspected on a weekly basis for malfunctions, deterioration and operator errors. Loading and unloading areas are inspected daily for leaks and spills.

The specific procedures for loading, unloading and transporting container shipments are as follows:

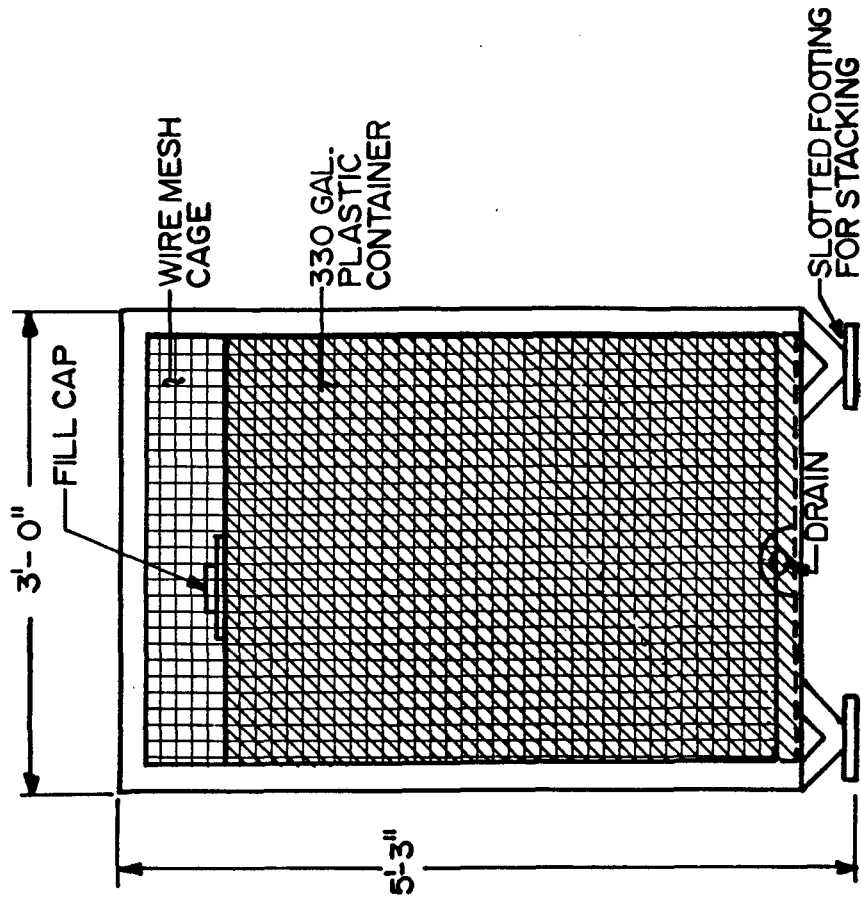
a) Unloading Operations for Containers

The specific procedures for unloading containers with free liquids are as follows:

- Container trucks will enter through the receiving gates located on East Aurora Street and park adjacent to the loading/



CIRCULAR STORAGE TOTE



CUBE STORAGE TOTE

FIG. 2.2
STORAGE TOTES
MACDERMID, INC.
526 HUNTINGDON AVE.
WATERBURY, CT.
NTS PB-MAN-Ø
10/88

unloading dock. The driver of the truck will report to the warehouse office.

- If the material is accepted by the warehouse personnel and/or office personnel, the driver will be instructed to proceed to the container unloading area.
- While unloading, the warehouse personnel will inspect the load to determine if any containers are damaged, unsealed, leaking, improperly marked or not numbered according to the manifest.
- Any damaged container will be transferred to an overpack container, sealed, and properly labelled prior to being unloaded.
- If any discrepancies are discovered, MacDermid, Inc. will telephone the generator or transporter to reconcile the discrepancy and within twenty (20) days, submit a report to the CT-DEP describing the discrepancy and the attempts to reconcile it.
- Upon approval from the warehouse supervisor, the load will be transported to the appropriate storage area and stored on the 43"x43" pallets to prevent contact with free standing liquids (except storage totes).

- When the truck is unloaded, the driver will be instructed to receive his completed paperwork (manifest) from the shipping/receiving office.
- Following actual unloading, any spills or leaks from the containers will be cleaned up, and the area decontaminated.

b) Loading Operations For Containers

The specific procedures for loading containers with free liquids are as follows:

- Container trucks will enter through the receiving gates located on East Aurora Street and park adjacent to the loading/unloading dock. The driver of the truck will report to the warehouse office.
- The warehouse personnel will inspect the load to make sure all containers are in good condition and properly marked and labelled.
- Any damaged container will be transferred to an overpack container, sealed, and properly labelled prior to being loaded onto the truck.
- When the truck is loaded, the driver will be instructed to receive his completed paperwork (manifest) from the shipping/receiving office.

- Following actual loading, any spills or leaks from the containers will be cleaned up, and the area decontaminated.

c) On-site Container Transporting

- The warehouse personnel will inspect all containers to make sure all containers are in good condition and properly marked and labelled prior to being transported to the recycling area.
- The material within any damaged container will be transferred to an approved container prior to being transported to the recycling area.
- Upon approval from warehouse personnel, each drum is transported to the container recycling area by an experienced operator using a barrel grabber or forklift. With the forklift, a maximum of four (4) containers on a wooden pallet will be moved at a time. All container transporting will be performed on concrete and asphalt.

2.3.2 Tanks

All bulk material transfers at the tank loading/unloading area are carried out with extreme care and caution so as to minimize the occurrence of leaks or discharges from truck

fittings and related storage tank structures. During loading and unloading, an operator will be present at all times to ensure that an overflow of waste does not occur.

The specific procedures for loading and unloading bulk shipment material are as follows:

a) Unloading Operations For Bulk Material

- All bulk material will be delivered on-site via the Huntingdon Avenue gate. To obtain access through this locked gate, the driver will activate the bell in the manufacturing area to contact manufacturing personnel. Upon entering the site, the driver will be directed to the bulk loading/unloading area. The entrance gate will be closed by manufacturing personnel.
- The truck will be gauged and sampled as necessary in accordance with the procedures specified in the Waste Analysis Plan (See Section 5.0).
- Prior to actual unloading, the manufacturing personnel will determine tank storage capacity by noting the external site gauge located on each tank (See Operating Logs in Section 11.0) to determine if the con-

tents of the truck will fit into the tank(s) being pumped into (prevent overflowing of any tank).

- Following actual unloading, any spills or leaks from the truck discharge piping will be cleaned up, and the area decontaminated.
- When the truck is unloaded, the driver will be instructed to receive his completed paperwork (manifest) from the traffic department.

b) Loading Operations For Bulk Material

- All trucks for bulk pick-up will enter the site via the Huntingdon Avenue gate. To obtain access through this locked gate, the driver will activate the bell in the manufacturing area to contact the manufacturing personnel. Upon entering the site, the driver will be directed to the bulk loading/unloading area. The entrance gate will be closed by the manufacturing personnel.
- Prior to actual loading, the manufacturing personnel will determine tank storage capacity by noting the external site gauge located on each tank (See Operating

Logs in Section 11.0) to determine the quantity of material available for transfer. This will prevent overfilling the truck.

- Following actual loading, any spills or leaks from the truck discharge piping will be cleaned up, and the area decontaminated.
- When the truck is loaded, the driver will be instructed to receive his completed paperwork (manifest) from the traffic department.

3.0 DESCRIPTION OF WASTES HANDLED

At MacDermid's 526 Huntingdon Avenue facility, hazardous wastes are generated on-site and used metal finishing, electronics, surface treatment, micro electronics and plating on plastics (hazardous wastes) are received from MacDermid's customers. All wastes managed at this facility are either: recycled on-site for resale to customers; or shipped off-site by certified waste haulers for off-site reclamation/disposal.

A complete list of the hazardous wastes accepted and generated at MacDermid, Inc. is provided in the facility's revised Part A application which can be found in Appendix B of the permit application.

Provided in this section is a description of the "chemical and physical analysis of the hazardous waste to be handled at the facility" as required under 40 CFR 270.14(b)(2).

The potential constituents for each waste designation (used metal finishing chemical) received at MacDermid, Inc. for recycling are listed on Table 3.1. The potential constituents for each waste designation generated at MacDermid, Inc. are listed on Table 3.2. The information provided on Tables 3.1 and 3.2 contain all the information necessary to provide proper storage of the wastes in accordance with 40 CFR 264.

TABLE 3.1

WASTE DESCRIPTION FOR
USED METAL FINISHING CHEMICALS
RECEIVED FROM CUSTOMERS

MacDermid Stream Number (EPA Hazardous Waste Number)	Material Description	Constituent	Allowable Conc. Range	Hazard	Handling Method
15225/19190/ 15227/19110/ 19109/19151/ 19140 (D002)	Copper Etchant	Copper Iron Lead Tin Zinc Ammonia Chloride pH Specific Gravity Flash Point	0-650,000 ppm 0-20 ppm 0-100 ppm 0-100 ppm 0-10,000 ppm 0-200,000 ppm 0-250,000 ppm 7.5-11.0 1.1-1.25 >200°F	Corrosive Toxic	S02
17526/17533 (D002)	Solder Conditioner	Copper Chromium (Hex) Iron Lead Tin Fluoborate Fluoride Chloride pH Specific Gravity Flash Point	0-2,000 ppm 0-5 ppm 0-1,000 ppm 0-1,000 ppm 0-200 ppm 0-5 ppm 0-10 ppm 0-20,000 ppm <2.0 1.0-1.1 >200°F	Corrosive Toxic	S01
16956 (CR04)	Recyclable NMP	Flash Point Specific Gravity Copper	>150°F 1.0-1.1 0-100,00 ppm	Toxic	S01

TABLE 3.1 (continued)

WASTE DESCRIPTION FOR
USED METAL FINISHING CHEMICALS
RECEIVED FROM CUSTOMERS

MacDermid Stream Number (EPA Hazardous Waste Number)	Material Description	Constituent	Allowable Conc. Range	Hazard	Handling Method
19204 (CR04)	Conditioner	Flash Point Specific Gravity Copper	>150°F 1.0-1.1 0-100,00 ppm	Toxic	S01
17566/19066 (D002/D007)	Chromic Acid	Copper Chromium (Total) Iron Lead Nickel Chloride Specific Gravity pH	0-5,000 ppm 0-500,000 mg/l 0-2,000 ppm 0-200 ppm 0-200 ppm 0-3,000 ppm 1.5-1.65 <2	Corrosive Toxic	S01
17507/17564/ 17595 (D002)	Solder Stripper	Copper Iron Lead Tin Chloride Fluoride TOC pH Specific Gravity	0-8,000 ppm 0-100 ppm 0-50 ppm 0-75,000 ppm 0-500 ppm 0-100,000 ppm 0-20,000 ppm 4-6 1.08-1.20	Toxic	S01

TABLE 3.2

WASTE DESCRIPTION FOR
WASTES GENERATED ON-SITE

EPA Hazardous Waste Number	Material Description	Constituent	Allowable Conc. Range	Hazard	Handling Method
12452/12404/ 17960/19650/ 19054 (CT Regulated Waste)	Electroless Copper	Copper	0-15,000 ppm	Toxic	S01
		Chromium (Total)	0-10 ppm		
		Iron	0-10 ppm		
		Lead	0-10 ppm		
		Tin	0-10 ppm		
		Zinc	0-20 ppm		
		pH	4-8		
F006	Metal Hydroxide/ Sulfide Sludge	Cadmium	0-500,000 ppm	Toxic	S01
		Hexavalent Chromium	0-500,000 ppm		
		Nickel	0-500,000 ppm		
		Cyanide (Complexed)	0-1,000 ppm		
		Cyanide (Total)	0-50,000 ppm		
		Heavy Metals, other	0-500,000 ppm		
		Sulfide	0-50,000 ppm		
		Specific Gravity	1.0-1.5		
		pH	7.5-9.5		
D002	Waste Nickel Solution	Nickel	0-100,000 ppm	Toxic	S01
		Cyanide (Total)	0-50,000 ppm	Corrosive	
		Heavy Metals, other	0-50,000 ppm		
		Specific Gravity	1.0-1.2		
		pH	<2, >12.5		

TABLE 3.2 (continued)

WASTE DESCRIPTION FOR
WASTES GENERATED ON-SITE

EPA Hazardous Waste Number	Material Description	Constituent	Allowable Conc. Range	Hazard	Handling Method
D001 F003 F005	Waste Mixed Solvents (Non-Chlorinated)	Xylene	0-100,000 ppm	Ignitable Toxic	S01
		Ethyl Acetate	0-100,000 ppm		
		Ethyl Benzene	0-100,000 ppm		
		Ethyl Ether	0-100,000 ppm		
		Methyl Isobutyl Ketone	0-100,000 ppm		
		n-Butyl Alcohol	0-100,000 ppm		
		Cyclohexanone	0-100,000 ppm		
		Methanol	0-100,000 ppm		
		Toluene	0-100,000 ppm		
		Methyl Ethyl Ketone	0-100,000 ppm		
		Carbon Disulfide	0-100,000 ppm	Ignitable Toxic	S01
		Isobutanol	0-100,000 ppm		
		Flash Point	<140°F		
		pH	5-9		
		Tetrachloroethylene	0-100,000 ppm		
		Methylene Chloride	0-100,000 ppm		
		Trichloroethylene	0-100,000 ppm		
		1,1,1-Trichloro- ethane	0-100,000 ppm		
		Chlorobenzene	0-100,000 ppm		
		1,1,2-Trichloro- 1,2,2, Trifluoro- ethane	0-100,000 ppm		
		Flash Point	<140°F		
		pH	5-9		
D001 F001 F002	Waste Mixed Solvents (Chlorinated)				

TABLE 3.2 (continued)

WASTE DESCRIPTION FOR
WASTES GENERATED ON-SITE

EPA Hazardous Waste Number	Material Description	Constituent	Allowable Conc. Range	Hazard	Handling Method
D008	Lead Fluoride Sludge	Lead Heavy Metals, other Fluoride Specific Gravity pH	0-100,000 ppm 0-50,000 ppm 0-100,000 ppm 1.0-1.5 5-12	Toxic	S01
D002 D007	Chromic Acid Solution or Dry Solid	Chromium Heavy Metals, other Specific Gravity pH Flash Point	0-500,000 ppm 0-50,000 ppm 1.0-1.3 <2.0 >140°F	Toxic Corrosive	S01
D002	Mixed Alkaline Solution or Dry Solid	pH Specific Gravity Flash Point	> 12.5 1.0-1.3 >140°F	Corrosive	S01
D001	Vacuum Pump Oil	pH Specific Gravity Flash Point	5-8 0.8-0.95 <140°F	Ignitable	S01
D002	Mixed Acid Solution or Dry Solid	pH Specific Gravity Flash Point	<2.0 1.0-1.3 >140°F	Corrosive	S01

TABLE 3.2 (continued)

WASTE DESCRIPTION FOR
WASTES GENERATED ON-SITE

EPA Hazardous Waste Number	Material Description	Constituent	Allowable Conc. Range	Hazard	Handling Method
U080	Methylene Chloride	Methyl Chloride Flash Point pH	0-1,000,000 ppm >140°F 5-9	Toxic	S01
D001	Styrene Monomer, Inhibited	Flash Point pH	<140°F 5-9	Ignitable	S01
D002	Copper Etchant	Copper Iron Lead Tin Zinc Ammonia Chloride pH Specific Gravity Flash Point	0-650,000 ppm 0-20 ppm 0-100 ppm 0-100 ppm 0-10,000 ppm 0-200,000 ppm 0-250,000 ppm 7.5-11.0 1.1-1.25 >200°F	Corrosive Toxic	S02
D002	Solder Conditioner	Copper Chromium (Hex) Iron Lead Tin Fluoborate Fluoride Chloride pH Specific Gravity Flash Point	0-2,000 ppm 0-5 ppm 0-1,000 ppm 0-1,000 ppm 0-200 ppm 0-5 ppm 0-10 ppm 0-20,000 ppm <2.0 1.0-1.1 >200°F	Corrosive Toxic	S01

TABLE 3.2 (continued)

WASTE DESCRIPTION FOR
WASTES GENERATED ON-SITE

EPA Hazardous Waste Number	Material Description	Constituent	Allowable Conc. Range	Hazard	Handling Method
D002	Solder Stripper	Copper	0-8,000 ppm	Toxic	S01
		Iron	0-100 ppm		
		Lead	0-50 ppm		
		Tin	0-75,000 ppm		
		Chloride	0-500 ppm		
		Fluoride	0-100,000 ppm		
		TOC	0-20,000 ppm		
		pH	4-6		
		Specific Gravity	1.08-1.20		
D002	Chromic Acid	Copper	0-5,000 ppm	Corrosive Toxic	S01
		Chromium (Total)	0-500,000 ppm		
		Iron	0-2,000 ppm		
		Lead	0-200 ppm		
		Nickel	0-200 ppm		
		Chloride	0-3,000 ppm		
		Specific Gravity	1.1-1.65		
		pH	<2		
CR04	Electroless Copper	Copper	0-15,000 ppm	CT-Regu- lated Waste	S01
		Chromium (Total)	0-10 ppm		
		Iron	0-10 ppm		
		Lead	0-10 ppm		
		Tin	0-10 ppm		
		Zinc	0-20 ppm		
		pH	4-8		

Also, EP toxic
PPEA recommended

4.0 PROCESS DESCRIPTION [40 CFR 270.15 and 270.16]

The principle business of MacDermid, Inc. is the manufacture and sale of process chemicals to the metal finishing, plating on plastics, micro electronics, electronics and surface treatment industries. MacDermid also provides a recycling service for certain specialty chemical products returned by their customers. Through these manufacturing and recycling operations, hazardous wastes are generated and temporarily stored on-site. Ultimately, all wastes are either: recycled on-site for resale to customers; or shipped off-site by certified waste haulers and disposed of at permitted hazardous waste disposal facilities.

Described herein, are the various operations employed by MacDermid, Inc. to store wastes.

Section 4.1 describes operations associated with containerized wastes including:

- 4.1.1 Loading/Unloading Operations
- 4.1.2 Specific Storage Area Operations
- 4.1.3 Acceptable Containers
- 4.1.4 Compatibility of Wastes
- 4.1.5 Inspections of Container Storage Areas.

Section 4.2 describes operations associated with bulk wastes including:

- 4.2.1 Loading and Unloading Operations
- 4.2.2 Storage Tank Operations
- 4.2.3 Compatibility of Wastes
- 4.2.4 Tank Inspections

4.2.5 Tank Filling and Transfer Procedures.

In addition, Section 4.3 describes on-site transportation of containers; Section 4.4, manifest processing; and Section 4.5, manifest discrepancies.

4.1 Containerized Waste

At MacDermid, Inc., containerized wastes are generated from the following sources:

- o By products from on-site research and manufacturing of plating, metal finishing and printed circuit board chemicals;
- o Sludges from the treatment of research and manufacturing process waste streams; and
- o Off-site customers returning used plating, metal finishing and printed circuit board chemicals for recycling.

The majority of the used chemicals returned for recycling include the following: alkaline copper etchant, solder stripper, chromic acid solder conditioner, electroless copper and N-M Pyrol. All used material is returned in the same container in which the virgin material was received. Included below is a description of the facilities and the procedures employed by MacDermid, Inc. to handle containerized wastes.

4.1.1 Container Loading/Unloading

For wastes containing free liquids container loading and unloading takes place at the East Aurora Street material warehouse loading area. The loading and unloading of the dewatered metal hydroxide/sulfide sludge generated at MacDermid,

Inc. takes place at the building located south of the Huntingdon Avenue gate. The general locations of these facilities are shown on Figure 2.1.

4.1.1.1 Facility Description - Loading/Unloading Dock

East Aurora Street

A. Container Loading/Unloading Dock

The container loading/unloading dock is located on the south side of the East Aurora Street warehouse. This area, which measures 115' x 19' consists of a concrete floor that slopes 4 inches from the loading/unloading docks to the storage level.

Any spillage within this area will be contained by virtue of the sloped concrete floor, concrete berm along the doors and the masonry block wall. The floor, walls and berms in the loading dock area are free of any cracks or gaps.

B Metal Hydroxide/Sulfide Sludge Loading/Unloading Area

The dewatered metal hydroxide/sulfide sludge is discharged

directly into a 26 cubic yard roll-off which is housed in the building located south of the Huntingdon Avenue gate. Movement of this roll-off from the building occurs through the garage door located on the south side of the building.

Any spillage of this dewatered sludge (no free liquid) is cleaned-up with brooms and shovels.

4.1.1.2 Facility Operation - Loading/Unloading Procedures

The procedures described under this section apply only to the containers containing free liquids. All container loading/unloading operations will be carried out with extreme care so as to minimize the possibility of damaging any containers. Such operations will be carried out only by a permitted fork-lift operator under the supervision of the supervisor and/or the group leader.

During all loading/unloading operations, at least ten (10) bags of absorbent and three (3) empty open-head drums

will be maintained on hand inside the East Aurora Street material warehouse in the event that spills occur during said operations. No smoking, open flames, welding, metal working, or other activities which may initiate a spark will be allowed within 50 feet of the loading/unloading area.

A) Unloading

The specific procedures for unloading container shipment material are as follows:

- 1) Container trucks will enter the facility through the south end receiving gate on East Aurora Street. The driver will be directed to park adjacent to the loading/unloading dock, and report to the warehouse office. If the material is accepted by the warehouse personnel and/or office personnel, the driver will be instructed to proceed to the container unloading area. The warehouse personnel will then inspect the load to make

sure it meets MacDermid's acceptance policy.

- 2.) Upon inspection, the following criteria will be used to determine whether a load will be rejected or accepted.

- a) Container Acceptance Policy

While unloading, the containers will be inspected to determine if any containers are damaged, unsealed, leaking, improperly marked, or not numbered according to the manifest. Any damaged containers or discrepancies will be referred to the warehouse supervisor for remediation. Damaged containers will be transferred to an overpack container, sealed, and properly labelled, prior to being unloaded. If any discrepancies are discovered, the warehouse supervisor will follow MacDermid's container

discrepancy policy outlined below.

b) Manifest Discrepancy Policy

Any variations in piece count for containers, will be considered a significant discrepancy. An attempt will be made to reconcile the discrepancy with the waste generator or transporter. If the discrepancy is not resolved within 20 days after receiving the waste, a letter will be submitted to the Regional Administrator describing the discrepancy and attempts to reconcile it, along with a copy of the manifest or shipping papers. Qualitative discrepancy determination will be addressed in procedures specified in the Waste Analysis Plan in Section 5.0.

- 3) Upon approval from the warehouse supervisor, the load will be accepted. All 55 gallon drums will be stored on 43"x43" pallets to prevent contact with free standing liquids and bound together with a strap to prevent tipping over.
- 4) When the truck is unloaded, the driver will be instructed to obtain his completed paperwork (manifest) from the Shipping/Receiving office.
- 5) Following actual unloading, any spills or leaks from the containers will be cleaned up, and the area decontaminated.

B. Loading

The specific procedures for loading container shipment material are as follows:

- 1) The transfer truck will enter the facility through the south end receiving gate on East Aurora Street and will be directed by warehouse personnel to the proper

loading area. The warehouse personnel will then inspect the load to make sure all containres are in good condition and properly marked and labelled.

- 2) The material within any damaged container will be transferred to an approved container or any damaged container will be transferred to an overpack container and in either case will be sealed and properly labelled prior to being loaded onto the truck.
- 3) When the truck is loaded, the driver will be instructed to receive his completed paperwork (manifest) from the Traffic Office.
- 4) Following actual loading, any spills or leaks from the containers will be cleaned up, and the area decontaminated.

4.1.2 Specific Container Storage Areas

4.1.2.1 Waste Acceptance

All wastes accepted in containers are compatible. However, to insure that the wastes delivered are the wastes that were approved, MacDermid personnel will spot test each drum. The spot test samples are analyzed as described in Section 5.0 of the Waste Analysis Plan. This analysis is completed prior to recycling or the placement of the waste into storage.

4.1.2.2 Facility Operation - Specific Container Storage Areas

MacDermid, Inc. stores containers in four (4) areas at the Huntington Avenue facility.

1. Main Container Storage Area

The main container storage area, which is located on the north side of the East Aurora Street warehouse (see Figure 2.1), has been designed to allow for storage of 77,000 gallons of aqueous material. The storage containers include 55 gallon plastic or steel drums, 13

gallon glass containers and 330 gallon storage totes.

The main container storage area located within a totally enclosed warehouse, measures approximately 42' wide by 93' long. Secondary containment (see Figure 4.1), is provided by means of; an epoxy coated concrete floor that is free of cracks; 3½" high concrete berm located along the south and east sides of the storage area; concrete block building walls; and a collection sump that is connected to the industrial waste water treatment system.

All containers within this building (except storage totes) are stored on 43"x43" wooden pallets on metal racks to minimize corrosion effects that could occur if the drums were in physical contact with the floor and/or any spilled materials. The storage totes which are designed for fork-lift handling (see Figure 2.2) are stored directly on the floor.

**US EPA New England
RCRA Document Management System
Image Target Sheet**

RDMS Document ID # 100852

Facility Name: MACDERMID INC

Facility ID#: CTD001164599

Phase Classification: R-1B

Purpose of Target Sheet:

☒ **Oversized** (in Site File) ☐ **Oversized** (in Map Drawer)

☐ **Page(s) Missing** (Please Specify Below)

☐ **Privileged** ☐ **Other** (Provide
Purpose Below)

Description of Oversized Material, if applicable:

FIGURE 4.1: MAIN CONTAINER STORAGE AREA

☒ **Map** ☐ **Photograph** ☐ **Other** (Specify Below)

*** Please Contact the EPA New England RCRA Records Center to View This Document ***

Containers on pallets are not stacked on top of one another. All containers are stored on pallets one high only and placed on a five high tier metal rack. Each five tier metal rack stores two pallets side by side in rows that are at 6'9" feet wide to provide MacDermid personnel easy access for inspection and handling.

The type of forklift utilized in the storage area is "guided" through the aisles by a system known as Portec Wire Guidance. This system electronically controls the direction of the fork truck. With this system, there is little or no potential for a forklift to accidentally hit a rack. This system is utilized throughout the warehouse storage area. Placement of pallets on racks is accomplished with manually operated lifts.

Any spillage within this area as stated previously, will be retained by virtue of the concrete

floor, walls of the building, concrete berm, and the collection sump. The collection sump which has a 200 gallon capacity is equipped with a manually operated control valve that is normally kept closed. All collected waste within this sump is visually/chemically inspected by MacDermid personnel (see Section 5.0). If compatible with the industrial waste water treatment system, all collected waste is discharged to the industrial waste water treatment system. Waste which is not compatible with the waste water treatment system is transferred into 55 gallon drums and disposed of off-site at a permitted facility for final treatment and disposal.

Small volumes of liquids (less than 55 gallons) accumulated in the secondary containment area and not collected in the sump will be absorbed with either a clay based material or soda ash and placed in a clean, 55 gallon drum. A sample

of this material will be tested as described in Section 5.0 of the Waste Analysis Plan to determine proper manifesting information. The drum will then be properly labelled, marked and stored until final disposition.

2. The Micro Storage Area

The micro storage area is located on the south side of the Gear Street building (Figure 2.1) and has been designed to allow for the storage of 6,701 gallons of aqueous materials. The storage containers utilized in this area include a maximum of 92, 55-gallon plastic or steel drums and 5, 330-gallon storage totes.

Secondary containment for this 24' x 24' area (see Figure 4.2) is provided by means of an epoxy concrete floor, building walls and 3" high epoxy coated angle iron berms. The angle iron berms are anchored to the concrete floor with 3/8" steel studs.

for
Figure 4.2
Material
Storage
Area

**US EPA New England
RCRA Document Management System
Image Target Sheet**

RDMS Document ID # 100852

Facility Name: MACDERMID INC

Facility ID#: CTD001164599

Phase Classification: R-1B

Purpose of Target Sheet:

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Purpose Below)**

Description of Oversized Material, if applicable:

FIGURE 4.2: FLAMMABLE MATERIAL STORAGE AREA

☒ **Map** ☐ **Photograph** ☐ **Other (Specify Below)**

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All 55 gallon containers within this area are stored on wooden pallets, a maximum of three high. The storage totes (330 gallon containers) are stored one high.

To provide MacDermid personnel easy access for inspection and handling, each row of 55 gallon drums (one pallet deep) and storage totes are separated by at 2-3.5 foot wide aisles.

Any spillage within this area will be retained by virtue of the concrete floor, walls of the building and berms which are free of any cracks or gaps.

Small volumes of liquids (less than 55 gallons) accumulated in the secondary containment area will be absorbed with a clay based material and placed in a clean, 55 gallon drum. A sample of this material will be tested as described in Section 5.0 of the Waste Analysis Plan to determine proper manifesting information. The drum will then be

properly labelled, marked and stored until final disposition.

Large volumes of liquids (more than 55 gallons) will be pumped into either 55 gallon drums or 330 gallon totes. A sample of this material will be tested as described in Section 5.0 of the Waste Analysis Plan to determine proper manifesting information. The drum(s) or storage tote will then be properly labelled, marked and stored until final disposition.

3. Flammable Material Storage Area

The flammable material storage area is located on the northeastern side of the Gear Street building (see Figure 2.1) and has been designed to allow for the storage of 16, 55 gallon containers or 880 gallon of flammable waste.

The flammable storage area, located within a totally enclosed building, measures 8'1" wide by 10'0" long. Secondary containment is provided by means of an epoxy

hazardous Storage Area > concrete floor, and a 4" high epoxy coated angle iron berm which completely surrounds the storage area (see Figure 4.3). Located outside the bermed area and within the facility building is a floor trench that drains to the industrial waste water treatment system.

All storage containers within this area are stored on wooden pallets, one high. The two rows of pallets are maintained two (2) feet apart to allow for inspection.

Any spillage within this storage area will be retained by virtue of the concrete floor and epoxy coated angle iron berms. All waste collected within this storage area will be transferred to 55 gallon drums and shipped off-site to a permitted facility for final treatment and disposal.

Small volumes of liquids (less than 55 gallons) accumulated in the secondary containment area will be absorbed with a clay based material

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RCRA Document Management System
Image Target Sheet**

RDMS Document ID # 100852

Facility Name: MACDERMID INC

Facility ID#: CTD001164599

Phase Classification: R-1B

Purpose of Target Sheet:

☒ **Oversized** (in Site File) ☐ **Oversized** (in Map Drawer)

☐ **Page(s) Missing** (Please Specify Below)

☐ **Privileged** ☐ **Other** (Provide
Purpose Below)

Description of Oversized Material, if applicable:

FIGURE 4.3: MICRO STORAGE AREA

☒ **Map** ☐ **Photograph** ☐ **Other** (Specify Below)

*** Please Contact the EPA New England RCRA Records Center to View This Document ***

and placed in a clean, 55 gallon drum. A sample of this material will be tested as described in Section 5.0 of the Waste Analysis Plan to determine proper manifesting information. The drum will then be properly labelled, marked and stored until final disposition.

Large volumes of liquids accumulated in the secondary containment area will be pumped into clean 55 gallon drums or storage totes. A sample of this material will be tested as described in Section 5.0 of the Waste Analysis Plan to determine proper manifesting information. The drum(s) or storage tote(s) will then be properly labelled, marked and stored until final disposition.

4. Metal Hydroxide/Sulfide Sludge Storage Area

The dewatered metal hydroxide/sulfide sludge generated from MacDermid's industrial waste water treatment system is stored in a single 26 cubic yard roll-off equipped with a drop-in liner. This roll-off is housed in the

building located directly south of the Huntingdon Avenue gate (see Figure 2.1).

To dewater the sludge at MacDermid, Inc., a filter press, which is stationed directly above the 26 cubic yard roll-off, is used. At the end of each filtering cycle, all dewatered sludge is discharged directly into the roll-off. The roll-off container is shipped off-site to a permitted facility for final treatment/disposal when full.

Any spillage of dewatered sludge within this area is placed into the roll-off using brooms and shovels. Any spillage of free liquid within this area will be discharged to the industrial wastewater treatment system via the floor trench. A layout of this storage area is provided as Figure 4.4.

Is filtrate sent
to IWTs, also?

4.1.3 Container Specifications

In order to minimize the possibility of leaks, spills, or discharges of materials accepted or shipped off-site, all containers received at or used by MacDermid must be of adequate design and composition, and comply with

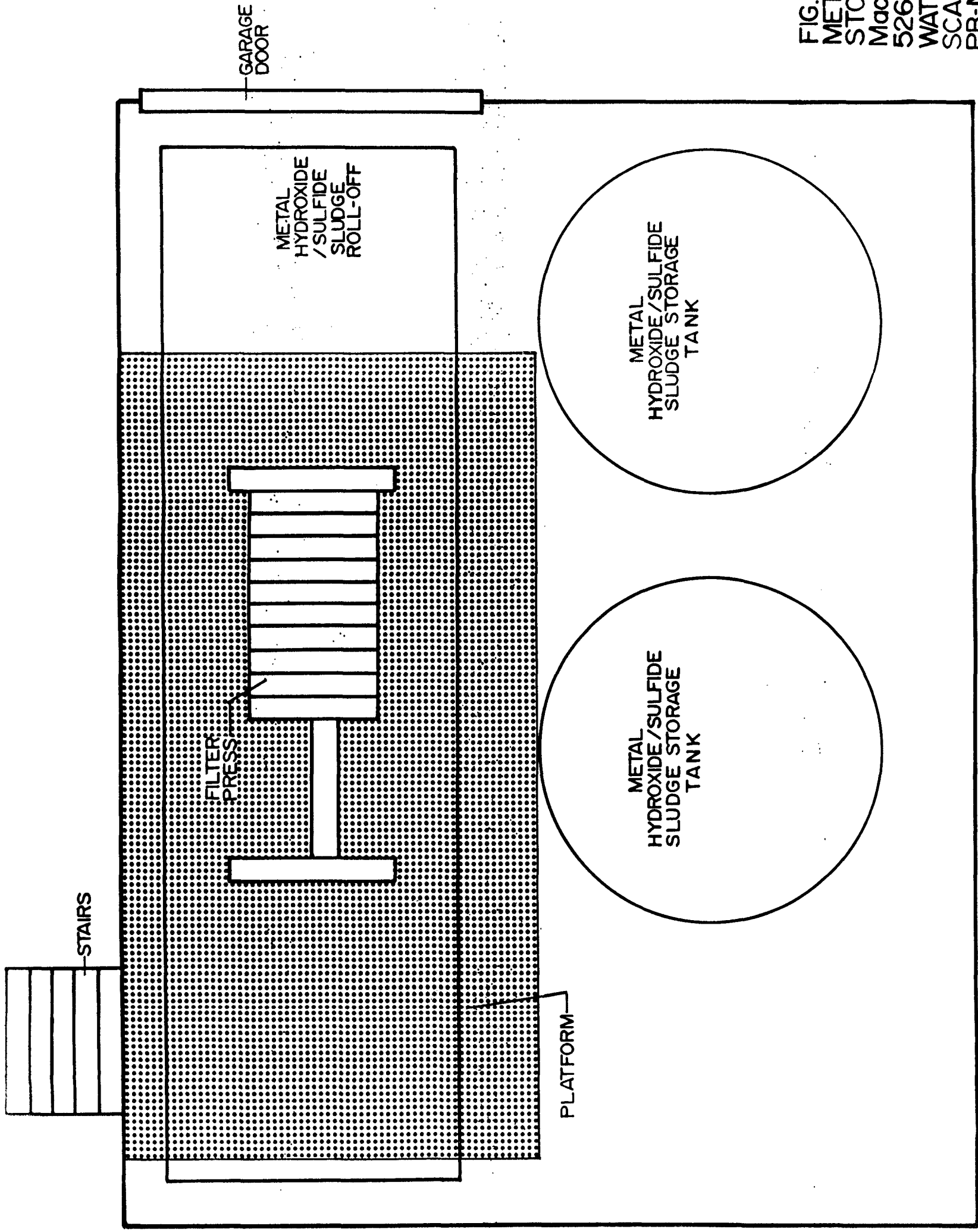


FIG. 4.4
 METAL HYDROXIDE/SULFIDE SLUDGE
 STORAGE AREA
 MacDERMID, INC.
 526 HUNTINGDON AVE.
 WATERBURY, CT.
 SCALE 3/8"=1'
 PB-MAN-Ø 10-88

the U.S. DOT packaging requirements found in 49 CFR 173 and 178.

4.1.4 Compatibility of Wastes - Container Storage Areas

Only compatible wastes will be stored within the various container storage areas at MacDermid. As a basis for determining compatibility, MacDermid personnel will use EPA guidance described in 40 CFR 264 Appendix V "Examples of Potentially Incompatible Wastes", as well as MacDermid's extensive knowledge and experience in storing chemical reagents.

4.1.5 Inspection - Container Storage Area

All containers will be inspected prior to storage to assure that all bungs are tightly sealed and that no drums are leaking. Individual drums will be checked for leaks. Any leaking drum will be removed and its contents will be transferred to a new drum. The floor and berm will also be inspected on a weekly basis to identify any deterioration of the epoxy finish.

4.2 Tank Storage

Bulk wastes handled at MacDermid, Inc. are primarily received from off-site customers for the recycling operation, however, on occasion, bulk loads from on-site process/manufacturing operations may be generated.

4.2.1 Bulk Loading/Unloading

The bulk loading/unloading area is located within the building in the northwestern corner of the Huntingdon Avenue plant. All material transfer at the bulk loading/unloading area (see Figure 2.1) is carried out with extreme care and caution so as to minimize the occurrence of leaks or discharges from truck fittings and related storage tank structures. During loading and unloading, an operator will be present at all times to insure that an overflow of waste does not occur.

A. Unloading

The specific procedures for unloading bulk shipment material are as follows:

- All bulk material will be delivered on-site via the Huntingdon Avenue gate. To obtain access through this locked gate, the driver will activate the bell in the manufacturing area to contact manufacturing personnel. Upon entering the site, the driver will be directed to the bulk loading/unloading area. The entrance gate will be closed by manufacturing personnel.

- The truck will be gauged and sampled as necessary in accordance with the procedures specified in the Waste Analysis Plan (see Section 5.0).
- Prior to actual unloading, the manufacturing personnel will determine tank storage capacity by noting the external site gauge located on each tank (see Operating Logs in Section 11.0) to determine if the contents of the truck will fit into the tank(s) being pumped into (prevent overflowing of any tank).
- Following actual unloading, any spills or leaks from the truck discharge piping will be cleaned up, and the area decontaminated.
- When the truck is unloaded, the driver will be instructed to receive his completed paperwork (manifest) from the traffic department.

B. Loading

- All trucks for bulk pick-up will enter the site via the Huntingdon Avenue gate. To obtain access through this locked gate, the driver will activate the bell in the manufacturing area to contact the

manufacturing personnel. Upon entering the site, the driver will be directed to the bulk loading/unloading area. The entrance gate will be closed by the manufacturing personnel.

- Prior to actual loading, the manufacturing personnel will determine tank storage capacity by noting the external site gauge located on each tank (see Operating Logs in Section 11.0) to determine the quantity of material available for transfer. This will prevent overfilling the truck.
- Following actual loading, any spills or leaks from the truck discharge piping will be cleaned up, and the area decontaminated.
- When the truck is loaded, the driver will be instructed to receive his completed paperwork (manifest) from the traffic department.

4.2.2 Storage Tanks

At MacDermid, Inc.'s Huntingdon Avenue facility, wastes are stored in four above ground tanks located on the west side of the Processing Area building (Figure 4.5). Each storage tank

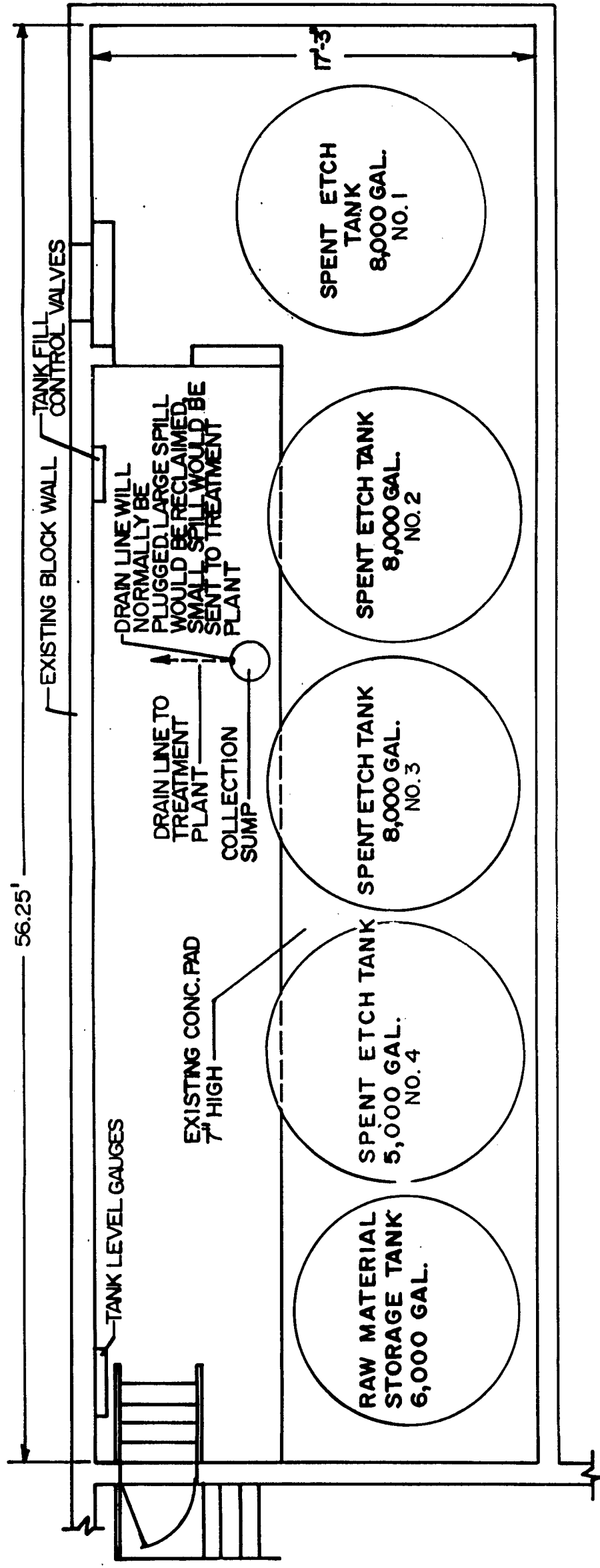


FIG. 45
 WASTE STORAGE TANKS
 WASTE DERMID, INC.
 526 HUNTINGDON AVE.
 WATERBURY, CT.
 APPROX. SCALE: 1"=50'
 PB-MAN-Ø 10/88

is used to store spent copper etch (alkaline based material) designated for recycling. The total storage capacity provided by the 3, 8,000 gallon FRP tanks and 1, 5,000 gallon FRP tank is 29,000 gallons.

Secondary containment for these tanks is provided by an epoxy coated concrete floor, building walls and 2'7" high block walls located at both entrance ways. For protection against deterioration due to spillage of waste, the block walls and building walls have also been epoxy coated.

Secondary containment calculations are provided under Section 9.0 of this application.

4.2.3 Compatibility of Wastes

The spent copper etchant has been evaluated and has been determined to be compatible with FRP. The basis of evaluation is 40 CFR 264 Appendix V - Examples of Potentially Incompatible Waste, and, also, MacDermid's knowledge and experience the storage of chemical reagents.

4.2.4 Tank Inspections

At least once each operating day, the level in each tank will be either measured (external sight gage), or verified from previous readings,

if no discharges have been made from the particular tank. The tank levels will be recorded in the Operating Record.

This log of tank levels will be utilized prior to the acceptance or removal of material to verify adequate capacity in the tank or truck for said acceptance. This will preclude the possibility of overfilling the tanks or trucks.

At least once each week, the exterior of each tank will be visually inspected to detect corrosion, erosion, cracks and leakage from seams and fixtures. The immediate area surrounding the tanks will also be inspected weekly to detect obvious signs of leakage. The results of these inspections will be entered into the Operating Record. Any leaking tank will be emptied and its contents will be transferred to a new tank. The floor and block wall will also be inspected on a weekly basis to identify any deterioration of the epoxy finish.

All tanks are equipped with access manholes to facilitate internal inspections, as necessary.

4.2.5 Tank Filling and Transfer Procedures

All bulk storage tanks are filled by attaching a hose from the tanker truck to the storage tank feed piping, and then pumping the

truck contents into the appropriate storage tank using compressed air. Each tank is equipped with an external sight tube that is visible from the fill control valves so that the operator can determine when to switch to an empty tank during filling operations, so as to prevent overfilling.

In addition, level gauges for each tank are located at the entrance to the bulk storage room for operator reference.

Transfer of spent copper etch to processing operations is via a portable pump, which is connected to individual tanks by hose, as necessary. Since piping on each tank is independent of the others, rupture of one tank would not affect the piping on other tanks.

4.3 Transporting Containers

All containers at the MacDermid facility containing waste will be stored on-site only within designated storage areas. From these areas, the containers will be transported to the recycling production area for processing or to the shipping area to be disposed of off-site. The specific procedures for transporting containers to processing areas are as follows:

- The warehouse personnel will inspect all containers to make sure all containers are in good condition and properly marked and labelled prior to being transported to the recycling area.

- The material within any damaged container will be transferred to an approved container, sealed, and properly labelled prior to being transported to the recycling area.
- Upon approval from warehouse personnel, each drum will be transported to the container recycling area by an experienced operator using a barrel grabber or forklift. With the forklift, a maximum of four (4) containers on a wooden pallet will be moved at a time. All container transporting will be performed on concrete surfaces.
- Following actual container transporting, any spills or leaks from the containers will be cleaned up, and the area decontaminated.

4.4 Manifest Processing

All incoming shipments of hazardous waste to MacDermid, Inc. must be accompanied by a properly completed manifest form whether or not the waste is hazardous. All outgoing shipments of hazardous waste from MacDermid are accompanied by a properly completed manifest.

MacDermid, Inc. will review all manifests prior to acceptance of the shipment to assure proper completion and that MacDermid, Inc. has been designated by the generator to receive the material. MacDermid, Inc. will review all manifests prior to an outgoing shipment leaving the facility to insure proper completion.

Upon acceptance of a waste shipment, MacDermid, Inc. will sign and date the manifest to indicate receipt of said shipment. Any significant manifest discrepancies will be noted on the manifest form (refer to Section 5.0, Waste Analysis Plan and Section 4.2, Manifest Discrepancy).

4.4.1 Manifest Completion

A properly completed manifest would include the following information:

- Generator Name/Address/ID No./Telephone number
- Transporter(s) Name/Address/ID No./Telephone Number
- Hazardous Waste Facility Name/Address/ID No./Telephone Number
- Type of Waste
- Type of Container
- Amount of Waste
- Waste Description
- Special Handling Instructions
- All appropriate DOT, EPA and UN/NA codes

4.4.2 Manifest Distribution

For wastes received at MacDermid, Inc. accompanied by the Uniform Manifest Form, the eight (8) copies must be distributed as follows:

Copy 1: When the manifest is completed by MacDermid, MacDermid mails this copy to the State of Connecticut.

Copy 2: When MacDermid has completed the facility section of the manifest, MacDermid mails this copy to the State where the waste was generated.

Copy 3: When MacDermid has completed the facility section of the manifest, MacDermid mails this copy back to the Generator within 15 days after the delivery of the waste who must retain it on site for his records.

Copy 4: When MacDermid has completed the facility section of the manifest, MacDermid keeps this copy for their records.

Copy 5: When the transporter has completed the transporter section of the manifest, and transfers the waste to MacDermid, MacDermid returns this portion to the transporter who keeps this copy for his records.

Copy 6: When the generator has completed the generator section and transfers his waste to the transporter, he mails this copy to the State of Connecticut.

Copy 7: When the generator has completed the generator section of the manifest and transfers his waste to the transporter, he mails this copy to the State where the waste was generated.

Copy 8: When the generator has completed the generator section of the manifest, the transporter has completed his section and the generator has transferred his waste to the transporter, he keeps this copy for his records.

For wastes generated by MacDermid accompanied by the Uniform Manifest Form, the eight (8) copies will be distributed as follows:

Copy 1: When the manifest is completed by the TSDF, the TSDF mails this copy to the State where the TSDF is located.

- Copy 2: When this TSDF has completed the facility section of the manifest he mails this copy to the State of Connecticut.
- Copy 3: When the TSDF has completed the facility section of the manifest he mails this copy back to MacDermid within 15 days of delivery. MacDermid must retain this copy on site for three (3) years.
- Copy 4: When the TSDF has completed the facility section of the manifest, the TSDF retains this copy.
- Copy 5: When the transporter has completed the transporter section of the manifest, and transfers the waste to the TSDF, the transporter retains this copy.
- Copy 6: When MacDermid has completed the generator section and transfers the waste to the transporter, MacDermid mails this copy to the TSDF State.
- Copy 7: When MacDermid has completed the generator section of the manifest and transfers the waste to the transporter, MacDermid mails this copy to the State of Connecticut.
- Copy 8: When MacDermid has completed the generator section of the manifest, the transporter has completed his section and MacDermid has transferred his waste to the transporter, MacDermid retains this copy for their records.

4.4.3 Exception Reporting

MacDermid retains copies 3 and 8 on file for a minimum of three (3) years. If copy 3 is not received from the TSDF within fifteen (15) working days of the date the waste was accepted by the initial transporter, MacDermid will contact the transporter and/or the designated TSDF to determine its whereabouts. If copy 3 is not

received within twenty (20) working days, MacDermid will submit an Exception Report to the State of Connecticut. This report will include a legible copy of the manifest in question and a signed cover letter detailing MacDermid's efforts to relocate the hazardous waste.

4.4.4 Transporter Requirements

All transporters bringing waste to, or taking waste from MacDermid will possess an EPA ID Number, have the required insurance and be permitted in Connecticut. For outgoing shipments MacDermid will ensure the transporter is permitted in the receiving state and all intermediate states.

4.5 Manifest Discrepancy

A discrepancy results when the following types of events occur:

1. The number of containers on a shipment does not match (by count) the number of containers listed on the manifest accompanying the shipment;
2. The shipment includes containers that are labelled differently from the identification numbers shown on the manifest;
3. Any of the containers is damaged or leaking;
4. The size of the containers that arrive are different from the size stated on the manifest;
5. Proper and/or correctly filled out paperwork does not arrive with the shipment;

6. Container packaging and/or labelling is not per U.S. DOT specifications;
7. A bulk shipment arrives with a volume or weight discrepancy of more than 10 percent;
8. A waste arrives which does not match the first time customer sample and stream code and/or manifest information;
9. The shipment arrives on a date other than that indicated on the manifest.

To resolve discrepancies, MacDermid would contact the generator and, if necessary, the transporter. If the discrepancy involved errors or omissions on the manifest accompanying the shipment, they would be corrected on the manifest and noted. If the arrival piece count or volume were in error, both the transporter and generator would have to be contacted to establish the proper volumes and the reason for the discrepancy. If the waste characteristics differed from the first time customer waste sample and stream code and/or manifest information, the procedure detailed in the Waste Analysis Plan (Section 5.0) would be implemented.

If a discrepancy is not resolved within 20 days after receipt of shipment, MacDermid would file a manifest discrepancy report with EPA describing the discrepancy, and the attempts made to resolve it including a copy of the manifest at issue. When a load of waste is rejected and a manifest discrepancy report filed as described in the Waste Analysis Plan (Section 5.0), this report must include the reasons for rejection, the ultimate disposition of the waste and a copy of the manifest that accompanied the waste.

hrp associates inc.

5.0 WASTE ANALYSIS PLAN [40 CFR 264.13, 270.14 (b)(3)]

5.1 Purpose

Federal regulations require that all hazardous waste treatment, storage, and disposal facilities analyze wastes prior to acceptance, and have a plan for this analysis.

This section describes the plan for sampling, testing and evaluating the wastes handled to assure sufficient information is available for the safe and proper management of all materials.

5.2 Chemical And Physical Analysis

Hazardous wastes stored and recycled at MacDermid, Inc. are either listed or characteristic wastes as defined in 40 CFR Part 261. The designation given to a particular waste stream (e.g., D001, F001, U002) is based on the process generating the waste and the characteristics of the waste as determined by analysis performed by MacDermid, Inc., or an off-site certified laboratory.

The description of all wastes handled at MacDermid including: wastes accepted from customers for recycling; and, wastes generated on-site and the associated waste stream designations, are detailed on Tables 3.1 and 3.2 respectively.

5.3 Waste Analysis Plan

The MacDermid facility maintains a waste analysis plan to identify all wastes prior to: approval, acceptance, storage, internal movement and offering for transportation off-site.

5.3.1 Frequency of Analysis

In order to determine the appropriate handling methods for a particular waste stream, MacDermid, Inc. has established the following waste analysis procedures.

A. First Time Customer Waste Stream Identification

All new and existing customers returning a used metal finishing chemical to MacDermid, Inc. for recycling for the first time are required to complete the following:

- o submit a representative sample to MacDermid, Inc. for analysis;
- o collect and transport the sample in accordance with the specific procedures listed in Appendix C; and
- o sign and return the written agreement between MacDermid, Inc. and the customer (see Appendix C).

Prior to waste acceptance, the representative sample will be analyzed by MacDermid, Inc., or an off-site certified laboratory, for the key descriptive parameters listed on Table 3.1. MacDermid,

Inc. will only consider for acceptance, a waste stream which falls within the constituents and concentration ranges described in Table 3.1.

B. Received Waste Streams

Upon delivery of a waste load to MacDermid, Inc., a representative sample from each container and tanker will be collected and spot tested. If any of the spot tests do not meet the specifications listed on Table 5.1, the waste sample will be analyzed for the parameters specified on Table 3.1. If these results differ from the first time customer waste analysis, but are within the allowable range of contaminants, MacDermid, Inc. will contact the generator for an explanation.

Depending upon the explanation provided by the generator, MacDermid will either reject the load and file a manifest discrepancy report or renegotiate the disposal price. If the results of the analysis indicate constituents are outside the allowable range of contaminants listed in Table 3.1, the waste load will be rejected.

All acceptable waste loads will be transferred to the appropriate storage tank or container storage area.

C. Wastes Generated On-Site

The hazardous wastes generated on-site are either recycled for on-site/off-site reuse or shipped off-site to a permitted facility for final treatment/disposal. All wastes (each container or tank) designated for recycling are spot tested to ensure the waste stream falls within the specifications listed on Table 5.1. Waste streams which fail any of the spot tests will be analyzed for the parameters listed on Table 3.1. Any waste stream with constituents outside the acceptable concentration ranges will be disposed of off-site.

All known waste streams designated for off-site disposal have been identified by MacDermid, Inc., the receiving TSDF, or a off-site certified laboratory, for all possible hazardous chemical and physical properties. To ensure the analytical information is accurate and up-to-date, each waste stream will be reanalyzed every three (3)

years. However, if MacDermid has reason to believe that a process has been altered, analysis of the suspected waste stream will be conducted to update the waste characterization data. The analytical parameters to be tested and testing procedures to be followed are listed under Tables 3.2 and 5.3 respectively.

All unknown waste streams will be analyzed by MacDermid, Inc., or an off-site certified laboratory, to determine the waste's characteristics.

D. Spills

All large and small spills contained within the various storage areas will be analyzed immediately to determine the characteristics of the spilled waste. No waste will be discharged to the industrial waste water treatment system via the floor sump/trench system until the waste has been determined to be compatible with the treatment system. Any incompatible waste will be collected in 55 gallon drums or storage totes for off-site disposal.

5.3.2 Analysis Parameters

MacDermid, Inc. currently handles those waste designations which are specified in Tables 3.1 and 3.2. Consequently, the analysis to be performed on the waste streams to be handled at MacDermid, Inc. must provide the necessary information to: characterize and quantify the waste in order to determine if the waste is acceptable; determine proper handling procedures for the wastes; and finally, to establish a competitive cost for the customer.

A. First Time Customer Waste Stream

All new and existing customers are required to submit representative samples of used metal finishing chemicals which are to be reclaimed by MacDermid, Inc. for the first time. Each waste designation will be analyzed for the specific parameters listed under Table 3.1.

B. Received Waste Stream

Representative samples will be collected from each container and tanker received at MacDermid, Inc. To assure the waste stream is acceptable for recycling, the spot tests listed under Table 5.1 will be conducted for each specific waste

TABLE 5.1

SPOT TESTING PARAMETERS

MACDERMID, INC.
526 HUNTINGDON AVENUE
WATERBURY, CT

<u>MacDermid Waste Stream/ Stream Numbers</u>	<u>Parameter</u>	<u>Specification</u>
Spent Electroless Copper 97960/92404/92452/ 99054/99650	Appearance	Light blue, homo- geneous liquid at 75°F
	pH	5-7
	Copper Chelator	0-25,000 ppm 0.04 M
Spent Solder Conditioner 97526/97533	Appearance	Yellow to water white homogeneous liquid at 75°F
	pH	<3.0
	Foam Test	No foam after 30 seconds
	Sulfur Titanium Attack	Positive No gassing after 1 minute, no dis- coloration or pitting after 10 minutes
Spent Solder Stripper 97507/97564/97595	Appearance	Light brown or blue to blue-green (not green) homogeneous liquid at 75°F
	pH	4.5 to 6.0
	Free Ammonia	Negative
	Sulfur	Negative
	Ammonia	Positive
Spent Copper Etchant 99190/99140/99151	Appearance	Deep blue homo- geneous liquid at 75°F
	Specific Gravity	1.16-1.23 at 75°F
	Ammonia Test	Positive
Recycled MNP	Appearance	Light yellow to dark brown, clear liquid with no phase separation
	Specific Gravity Water Content	1.017 to 1.037 15%

designation. Waste streams that fail any of the spot tests will be analyzed for the specific parameters listed on Table 3.1.

The spot tests listed on Table 5.1 have been developed by MacDermid's research and development department to accurately determine when a waste stream following normal uses is within chemical specifications to allow recycling.

C. Generated Waste Streams

All hazardous waste streams generated at MacDermid, Inc., and designated for recycling, will be spot tested for the parameters listed on Table 5.1. Any waste stream which fails one or more of the spot tests, will be analyzed for the specific parameters listed on Table 3.1.

All known waste streams (e.g. metal hydroxide/sulfide sludge) generated at MacDermid will be reanalyzed every three (3) years to ensure the waste's characterization data is accurate and up-to-date. This analysis, however, will be repeated immediately if the process generating the waste has been altered. The parameters to be analyzed for each known hazardous waste stream are listed on Table 3.2.

All unknown wastes will be analyzed for the parameters listed on Table 5.2 to determine the waste's hazardous characterization data.

D. Spills

Any large quantity of spilled material contained in the container/tank storage areas will be sampled and analyzed as described for first time customer waste streams and/or known generated waste streams (see Section 5.3.2 A and 5.3.2 C) following MacDermid, Inc.'s inspection of the leaking/spilled containers. Small spills collected in the various floor sumps/trenches within the storage area will be tested as described in Section 5.3.2 B for received wastes prior to discharge to the industrial waste water treatment system.

5.3.3 Parameter Rationale

The reasoning behind testing for the parameters detailed in Sections 5.3.2 A, B, and C is: to provide the information needed to determine if the waste is acceptable; and to determine proper handling, manifesting, and pricing of the waste. The parameters chosen

TABLE 5.2

UNKNOWN WASTE STREAMS
ANALYTICAL PARAMETERS

MACDERMID, INC.
526 HUNTINGDON AVENUE
WATERBURY, CT

<u>Parameter</u>	<u>Test Method</u>	<u>Reference</u> ¹
Specific Gravity	Hydrometry	--
Flash Point	Pensky-Martens (closed cup)	1010
pH	Probe	9049
Metals	Pretreatment	1310
- Arsenic	Atomic Absorption	7060
- Barium	Atomic Absorption	7080
- Cadmium	Atomic Absorption	7130
- Chromium (total)	Atomic Absorption	7190
- Chromium (hex.)	Coprecipitation	7195
- Copper	Atomic Absorption	7210
- Iron	Atomic Absorption	7380
- Lead	Atomic Absorption	7420
- Mercury	Atomic Absorption	7470
	Hydride/Flame	
- Nickel	Atomic Absorption	7520
- Selenium	Atomic Absorption	7740
- Zinc	Atomic Absorption	7950
- Tin	Atomic Absorption	7870
Halogenated Volatile Organics	Gas Chromatography	8010

¹ Test Methods for the Evaluation of Solid Wastes
Physical/Chemical Methods, EPA, SW-846, 3rd edition, November,
1986.

provide a description, or fingerprint, of the waste. They also identify components which would render the waste unacceptable. The specific analytical parameters have been selected to assure the following:

1. That the waste fits into one of the designations detailed on Tables 3.1 and 3.2.
2. That parameters are tested for which are consistent with the waste constituents or waste characteristics which caused the waste to be listed or characteristically hazardous.
3. That the waste can be safely managed at the MacDermid facility.
4. That the waste stream will not cause the failure of, or the interruption of, a treatment operation at MacDermid.
5. That a handling and processing scheme can be designated and an outlet found for the waste before it ever arrives at the MacDermid facility.
6. That the waste received is the waste which was approved by MacDermid, Inc.
7. That manifest discrepancies related to waste material identification can be determined upon receipt.
8. That wastes generated by MacDermid can be properly identified, handled and manifested off-site.
9. Appropriate response actions can be taken in the event of a spill.

5.3.4 Rejection of Wastes

Waste loads will not be accepted or considered for acceptance under the following conditions:

A. First Time Customer Waste Stream

MacDermid, Inc. will not consider for acceptance, any used metal finishing chemical other than those listed on the Part A permit application (see Appendix B) and detailed on Table 3.1. All new and existing customers must submit a representative sample of all first time waste streams to MacDermid, Inc. for analysis. A first time customer waste stream with concentrations of a given parameter outside those detailed on Table 3.1 will not be accepted even if it falls within a Part A designation.

B. Received Waste

Received wastes from customers will be analyzed as detailed in Sections 5.3.1 A and 5.3.2 A.

If any of the spot tests do not meet the specifications listed on Table 5.1, the waste sample will be analyzed for the parameters specified on Table 3.1. If

these results differ from the first time customer analysis but within the range of contaminants, MacDermid, Inc. will contact the customer as to the discrepancy to avoid future parameter problems.

If the waste does not fall within the designations shown on Table 3.1 the waste load will be delivered to an alternate TSDF per the generator's instructions or MacDermid's discretion.

For all rejected wastes, the manifest will be marked by the plant manager to indicate the disposition of the waste and a manifest discrepancy report filed.

5.3.5 Methods of Analysis

A. First Time Customer Waste Stream

The specific analytical methods to be followed by MacDermid, Inc., or an off-site certified laboratory, for first time waste streams are listed on Table 5.3. The specific parameters to be analyzed for each waste designation are provided on Table 3.1.

B. Received Wastes

The procedures developed and followed by MacDermid, Inc. for spot testing of received wastes are provided as Appendix D.

TABLE 5.3

METHODS OF ANALYSIS FOR FIRST TIME CUSTOMER
WASTE STREAMS AND GENERATED WASTE STREAMSMACDERMID, INC.
526 HUNTINGDON AVENUE
WATERBURY, CT

<u>Parameter</u>	<u>Test Method</u>	<u>Analytical Method</u>
Metals	E.P. Toxicity Analysis Use Pretreatment Method	1310
Arsenic	Atomic Absorption	7060, 7061 ²
Barium	Atomic Absorption	7080 ²
Cadmium	Atomic Absorption	7130, 7131 ²
Chromium, Total	Atomic Absorption	7190, 7191 ²
Chromium, Hexavalent	Colorimetric	7196 ²
Copper	Atomic Absorption	7210 ²
Iron	Atomic Absorption	7380 ²
Lead	Atomic Absorption	7420, 7421 ²
Mercury	Atomic Absorption	7470, 7471 ²
Nickel	Atomic Absorption	7520 ²
Silver	Atomic Absorption	7760 ²
Zinc	Atomic Absorption	7950 ²
Selenium	Atomic Absorption	7740, 7741 ²
Tin	Atomic Absorption	7870 ²
Chloride	Colorimetric	9250 ²
Sulfide	Titration	9030 ²
TOC	Carbonaceous Analyzer	9060 ²
Fluoride	Specific - Ion	413 ¹
Halogenated Volatile Organics	Distillation/Gas Chromatography	8010 ²
Non-Halogenated Volatile Organics	Distillation/Gas Chromatography	8015 ²
Aromatic Volatile Organics	Distillation/Gas Chromatography	8020 ²
Cyanide, total	Distillation	9010 ²
Specific Gravity	Hydrometry	--
Flash Point	Pensky-Martens (closed cup)	1010 ²
pH	Probe	9040 ²
Ammonia	Electrode	417 ¹

¹ Standard Method for the Examination of Water and Wastewater, 15 ed., American Public Health Association, American Water Works Association, Water Pollution Control Federation, 1985.

² Test Methods for the Evaluations of Solid Wastes Physical/Chemical Methods, EPA, SW-846, 3rd edition, November, 1986.

C. Generated Wastes (Known)

The specific analytical methods to be followed by MacDermid, Inc., or an off-site certified laboratory, for all known waste streams generated on-site (e.g. metal hydroxide sludge) are listed on Table 5.3. The specific parameters to be analyzed for each waste designation are provided on Table 3.2.

D. Generated Wastes (Unknown)

The specific analytical methods to be followed by MacDermid, Inc., or an off-site certified laboratory, to determine the hazardous characteristics of any unknown waste stream are listed on Table 5.2.

5.3.6 Sampling Procedures

All samples will be collected and preserved in accordance with the principles described below.

5.3.6.1 Method

Sample collection and preservation techniques vary with the characteristics of the wastes (solid, liquid) and types of analysis to be conducted on the waste.

In selecting the appropriate sample containers, MacDermid considered the following guidelines: Sample containers must not distort, rupture or leak as a result of chemical reactions with constituents of waste samples; they must have adequate wall thickness to withstand handling during sample collection and transport to the laboratory; and containers must be large enough to contain the required volume of sample for analysis.

Based on these guidelines, the following plastic and glass containers are generally used for collecting and storing hazardous waste samples at MacDermid.

1. 600 cc Polyethylene (High Density)
2. Glass Bottle
3. Coliwasa used to collect liquid samples.

5.3.6.2 Sample Collection

All first time waste streams are sampled by the customer and submitted to MacDermid. To assist the customer in the proper procedures for sample

collection, the instructions included in Appendix C are provided to all customers.

For all shipments to the plant, MacDermid personnel collect the sample in accordance with the following procedures:

- A. Sampling of liquids from: drums; shallow open top tanks; and similar containers, is accomplished using a Coliwasa and in accordance with the following procedures:
1. Clean Coliwasa.
 2. Adjust sampler's locking mechanism to ensure that the stopper rod handle is in the T-position and pushing the rod down until the handle sits against the sampler's locking block.
 3. Slowly lower the sampler into the waste at a rate that permits the level of liquid inside and outside the sampler to remain the same. If the level of waste in the sampler tube is lower inside than outside, the sampling rate is too fast and will produce a unrepresentative sample.
 4. When the sampler hits the bottom of the waste container, push sampler tube down to close and lock the stopper by turning the T-handle until it is upright and one end rests on the locking block.

5. Withdraw Coliwasa from waste and wipe the outside with a disposable cloth or rag.
6. All samples will be preserved as specified in Table 5.4.

B. Sampling Liquids from Deep Vessels

Samples of liquid waste from deep vessels are obtained using a weighted bottle and employing the following procedures:

1. Clean bottle.
2. Assemble weighted bottle sampler.
3. Lower the sampler to directed depth and pull out the bottle stopper by jerking the line.
4. Allow bottle to fill completely as evidenced by cessation of air bubbles.
5. Raise sampler, cap, and wipe off with a disposable cloth. The bottle can serve as a sample container.
6. All samples will be preserved as specified in Table 5.4.

C. Sampling Solids

Solid materials are sampled by taking a "core" sample vertically through the center of the material.

In both tanks and drums, if the tube inserted locates a sludge layer on the bottom, a "dipstick" is inserted to measure sludge height

TABLE 5.4

COLLECTION/SAMPLE PRESERVATION REQUIREMENTS

MACDERMID, INC.
526 HUNTINGDON AVENUE
WATERBURY, CT

<u>Parameter</u>	<u>Container</u>	<u>Preservation</u>
Metals	Plastic or Glass	HNO ₃ to pH <2
pH	Plastic or Glass	Cool to 4°C
Flash Point	Plastic or Glass	Cool to 4°C
Specific Gravity	Plastic or Glass	Cool to 4°C
Volatile Organic Compounds	Glass w/Teflon Seal	Cool to 4°C Sodium Thiosulfate
Chloride	Plastic or Glass	Cool to 4°C
Fluoride	Plastic	None required
Ammonia	Plastic or Glass	H ₂ SO ₄ to pH <2 Cool to 4°C
TOC	Plastic or Glass	H ₂ SO ₄ to pH <2 Cool to 4°C
Sulfide	Plastic or Glass	NaOH to pH >9 Cool to 4°C
Cyanide	Plastic or Glass	NaOH to pH >12 Cool to 4°C

(volume). Then separate samples of sludge and liquid are taken and combined.

A one inch tube made of a material that is compatible with the material to be sampled, is used.

5.3.6.3 Quality Control

The laboratory quality control procedures to be followed by analysts at MacDermid are described in the references cited on Tables 5.1, 5.2 and 5.3 for the various methods employed.

MacDermid, Inc. adheres as closely as practicable to the quality assurance procedures specified in the referenced analytical methods.

In addition, on a annual basis, in-house samples of "known" materials are prepared and tested, as "unknowns" by the analysts to insure analytical accuracy.

5.3.7 Waste Movement Within Facility

All materials are stored on-site in their appropriate storage areas before they are reclaimed or shipped off-site for final treatment/disposal and no physical or chemical change occurs or has reason to occur. Therefore,

no additional analysis of these wastes are performed beyond those described in Sections 5.3.1 and 5.3.2.

5.3.8 Analysis Records

Written copies of all analyses, including spot tests, are retained in MacDermid's Operating Logs.

6.0 SITE SECURITY PLAN

[40 CFR 264 Section 264.14 and Section 270.14(b)(4)]

6.1 General

Federal and state regulations require that stringent security measures be implemented at hazardous waste facilities in order to:

- prevent unknown entry and minimize unauthorized entry of persons and livestock from the active portion of the facility;
- provide 24-hour surveillance or artificial or natural barriers surrounding the entire facility;
- provide control of entry to the active portions of the facility; and
- provide signs with the legend "DANGER -- UNAUTHORIZED PERSONNEL KEEP OUT" at each entrance and other locations such that the signs may be seen from any approach to the facility.

Described in this section of the application are the security precautions taken at MacDermid, Inc. to meet the requirements of the regulations listed above.

6.2 Barriers/Surveillance

Prevention of unknowing entry and access to the active portions of the MacDermid, Inc. facility is accomplished by a combination of surveillance and barriers.

6.2.1 Barriers

Fences/Gates

The yard area at 526 Huntingdon Avenue is surrounded on three sides by a 6 foot high steel mesh fence with three strands of barbed wire on top (see Figure 6.1). The East Aurora Street Building serves as a barrier on the fourth side. The two (2) entrance gates to the Huntingdon Avenue yard are kept locked at all times. For the tankers and roll-off transporter to enter the site through the Huntingdon Avenue gate, the driver must first contact MacDermid's manufacturing personnel by activating the bell in the manufacturing department.

The steel mesh fence which extends from the East Aurora Street and Gear Street intersection to the shipping and receiving building is equipped with three gates. Security measures taken by MacDermid for these gates consists of surveillance by MacDermid's personnel within their respective working areas during the operating day and locking the gates after off-hours (after 5 o'clock Monday to Friday, weekends and holidays).

**US EPA New England
RCRA Document Management System
Image Target Sheet**

RDMS Document ID # 100852

Facility Name: MACDERMID INC

Facility ID#: CTD001164599

Phase Classification: R-1B

Purpose of Target Sheet:

☒ **Oversized (in Site File)** ☐ **Oversized (in Map Drawer)**

☐ **Page(s) Missing (Please Specify Below)**

☐ **Privileged** ☐ **Other (Provide Purpose Below)**

Description of Oversized Material, if applicable:

FIGURE 6.1: FACILITY ENTRANCES

☒ **Map** ☐ **Photograph** ☐ **Other (Specify Below)**

*** Please Contact the EPA New England RCRA Records Center to View This Document ***

B. Doors

All doors to the MacDermid facility are locked from the inside. Employee entrance is provided by four separate doors (see Figure 6.1) which can be activated only with MacDermid employee entrance cards.

All visitors and contractors are required to report to the 2nd floor main lobby located on Huntingdon Avenue.

6.2.2 Facility Lighting

Ample lighting is provided inside the facility and in outside areas to facilitate security measures.

6.2.3 Electronic Security

The active portion of the facility is monitored by "ADT" and Sonitrol, an electronic surveillance system. This system will notify the appropriate authorities (police department, fire department, MacDermid personnel) if: external doors are opened, high level alarm in waste water sump is activated, sprinkler system is activated, or equipment malfunctions such as failures in high temperature process tanks and boilers.

If the fire alarm is activated, ADT notifies ASI (Alarm Security Investigator) who opens the door for the Production/Research Lab for the

fire department to allow access to the premises. Next, ADT contacts the first person on MacDermid's on-call list.

6.2.4 Warning Signs

Warning signs are posted at each gate, corners of fence, and at intervals around the perimeter of the facility such that they are visible from all angles of approach. The signs are in English (the predominant language in the area surrounding the facility) and are constructed of 10 gauge steel, 20" x 14" each. The word "DANGER" is printed in red letters on a white background with letters 2½ inches high. The words "ADMITTANCE TO AUTHORIZED PERSONNEL ONLY" are printed in black letters on a white background with letters 1½ inches high. The sign is legible in day light at a distance of 50 feet. The specific location of warning signs posted at the MacDermid facility are listed below:

<u>Area</u>	<u>Sign(s)</u>
Huntingdon Ave. Gate	"Danger - Admittance to Authorized Personnel Only"
Gear Street Gate	"Danger - Admittance to Authorized Personnel Only"
East Aurora St. Gate	"Danger - Admittance to Authorized Personnel Only"
North Fence	"Danger - Admittance to Authorized Personnel Only"

6.3 Entry Control

The only open approach during the day to the MacDermid Huntingdon Avenue facility will be via the two East Aurora gates. All other gates are closed and locked. All trucks entering the facility are required to park adjacent to the warehouse loading docks, and report to the warehouse office. Upon entry, the warehouse supervisor will inspect the truck for both quantity and quality of hazardous waste material according to the manifest information. If approved by the warehouse supervisor, the driver will be directed to the proper loading/unloading area.

All visitors are required to park in visitor parking spaces provided opposite the Huntingdon Avenue main entrance to the building. Each visitor will be required to sign the visitor Log Book. Any visitor who wishes to enter the facility must be accompanied by a MacDermid employee.

Closing at the facility involves closing, locking and/or inspection of all doors in the facility and activating the 24-hour security system. The Production Manager is responsible for making sure that all entrances to the facility are locked after all personnel have left.

7.0 HAZARDOUS WASTE INSPECTION PLAN

(CFR 40, Sections 264.15 and 264.170-264.194)

7.1 Introduction

Under Section 264.15 of the code of Federal Hazardous Waste Regulations (CFR 40), the owner or operator must fulfill the following general inspection requirements:

- inspect his facility for malfunctions and deterioration, operator errors, and discharges which may cause release of hazardous waste or pose a threat to human health.
- conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.
- develop and follow a written inspection schedule which must be kept at the facility. This inspection schedule must identify the types of problems which must be looked for.
- inspect monitoring equipment, storage tanks, containers, treatment units, loading, unloading areas, safety and emergency equipment, security devices and operating and structural equipment.
- remedy any deterioration or malfunction that the inspection reveals and take remedial action where an incident is revealed.
- record all inspections, including date and time of inspection, name of inspector, notation of observations made and the date and nature of any repairs made and keep these records for a three year period.

7.2 Specific Procedures

Specific procedures for areas of inspection and frequency are included on Table 7.1.

TABLE 7.1INSPECTION SCHEDULE

<u>Area/ Equipment</u>	<u>Specific Item</u>	<u>Types of Problems</u>	<u>Frequency of Inspection</u>
Safety & Emergency Equipment	Absorbent Material	Out of Stock	Monthly/ as Needed
	Emergency Shower/ Eyewash	Water pressure, leaking, drainage	Weekly
	Goggles and Protective Glasses	Broken or dirty equipment	Monthly
	Rubber Gloves	Out of Stock	As Used
	First Aid Equipment and Supplies	Out of Stock or inoperative	As Used
	Telephone System	Power Loss	Per NFPA
	Fire Extinguishers	Needs recharging	Monthly/After Each Use
	Respirators/Cartridges	Out of Stock	Weekly
	Chemical Suits	Out of Stock/ wear and tear	As Used
	Shovels	Condition/ Out of Stock	As Used
	Scott Air Pack	Air delivery system, Air quantity in reserve	Monthly
	Oxygen Masks	Broken or dirty	Weekly
	CB's	Power	Monthly
	Fire Alarm System	Power failure	Per NFPA
	5-Minute Life Line	Air delivery system, Air quantity in reserve	Monthly

TABLE 7.1 (continued)

INSPECTION SCHEDULE

<u>Area/ Equipment</u>	<u>Specific Item</u>	<u>Types of Problems</u>	<u>Frequency of Inspection</u>
Container Storage and Handling Areas	Container Placement and Stacking	Aisle space, height of stacks	Weekly
	Sealing of Container	Open lids, torn lining	Weekly
	Labelling of Container	Improper identifi- cation, date missing	Weekly
	Containers	Corrosion, leakage, structural defects	Weekly
	Pallets	Damaged (e.g. broken wood, warping)	Weekly
	Base & Foundation of Container Storage Area	Cracks, spalling, uneven settlement, erosion, wet spots	Weekly
	Curbing for Container Storage Area	Cracks, deterioration	Weekly
	Storage Area	Leaks, spills	Daily
Waste Storage Tank Area	Level	Tank filled to capacity, unex- pected volume loss	Daily Record must be kept of level and gains and losses.
	Area Around Tank	Spotting indicating leaks	Weekly
	Fittings	Leaks, corrosion, deterioration	Weekly
	Base of Foundation	Cracks, spalling, uneven settlement, erosion, wet spots sealant, deterioration	Weekly

TABLE 7.1 (continued)

INSPECTION SCHEDULE

<u>Area/ Equipment</u>	<u>Specific Item</u>	<u>Types of Problems</u>	<u>Frequency of Inspection</u>
Waste Storage Tank Area	Pipes	Leaks, corrosion, deterioration	Weekly
	Valves	Loss of metal thick- ness, leaks, corrosion	Weekly
	Warning Signs	Damaged, missing	Weekly
	Level Gages	Working Order	Weekly
	Drainage System	Clean/free, evidence of spilled material	Weekly
	Concrete Block Wall	Cracks, sealant deterioration	Weekly
	Tank Shell	Cracks, corrosion, discoloration, bulges, buckles	Weekly
Loading/ Unloading Area	Warning Signs	Damaged, missing	Weekly
	Dike	Cracks, deterioration	Weekly
	Base & Foundation	Cracks, spalling, uneven settlement, erosion	Weekly
	Loading/Unloading Area	Spills	Daily
Security Devices	Facility Fence	Corrosion, damage to Chain-link fence	Weekly
	Gate	Corrosion, damage to Chain-link fence	Weekly

Remedial actions will be noted on the Inspection Log Sheets and maintained in the Operating Record for a minimum of three years. In case of a spill, fire or explosion, the following procedures are to be followed.

First, the Emergency Coordinator, or his alternate, would be contacted immediately. The Emergency Coordinator will then carry out the Contingency Plan agreed to by local organizations (police and fire departments, hospitals, etc.).

A spill, fire or explosion would be controlled or contained from spreading (if possible) without any further risk or danger to plant personnel.

The names and the phone numbers of the Emergency Coordinator and his designated alternate are listed in the Contingency Plan, for MacDermid, Inc. in Section 10.0.

7.3 Notification

The Connecticut Environmental Protection Agency will be notified by phone, followed by a written report if any of the following occur:

- 1) Release of hazardous wastes.
- 2) Fires involving hazardous wastes.
- 3) Explosions involving hazardous wastes.
- 4) Ground water contamination resulting from hazardous waste incidents.

7.4 Inspection Schedule

This section will delineate the equipment and structures at the facility which require routine inspections. A summary of the areas of inspection and inspection frequency are provided on Table 7.1.

7.4.1 Containment Areas

The storage containment areas consisting of concrete floor surfaces and berms will be visually inspected daily for signs of spills, leaks, and structural defects (i.e. cracks, damage, erosion, etc.).

7.4.2 Site Security

At the close of each operating day, all entry gates to the facility will be checked to ensure they are locked. All doors to the facility will be checked to ensure that they are locked.

7.4.3 Areas Subject to Spills

All areas which may be subject to spills will be inspected at least once each operating day for signs of spillage or leakage. These areas include the loading/unloading areas. The results of each such inspection will be entered into the Operating Record (Section 11.0).

7.4.4 Containers

[40 CFR Sections 264.15(a) and 264.174]

At least weekly, the drums in the container storage and container handling areas will be inspected for leaks, signs of corrosion, deterioration, pitting, bulging, and to ensure that each container is securely closed.

Adequate aisle space will be provided in the container storage area to allow for a thorough inspection of each drum in storage. During these inspections, each drum will be visually inspected. In addition, the storage and handling containment area consisting of all concrete floor surfaces, containment berms, and wall to floor joints will be visually inspected for evidence of spills, leaks, and structural defects (cracks, erosion, pitting, etc.). The results of each inspection and the nature of any repairs will be entered into the Operating Record.

7.4.5 Storage Tanks

This section will delineate the tanks and related structures which require routine inspections at the facility.

7.4.5.1 Tank Level [40CFR §264.194(a1-3)]

At least once each operating day,

the level in each tank will be either measured, or verified from previous readings if no deliveries or discharges have been made to or from the particular tank. The tank levels will be recorded in the Operating Record.

This log of tank levels will be utilized prior to the acceptance or transfer of additional material to verify adequate capacity in the tank for said acceptance. This will preclude the possibility of overfilling the tanks.

7.4.5.2 Construction Materials [40 CFR §264.194(a4)]

At least once each week, the exterior of each tank will be visually inspected to detect corrosion, erosion, cracks and leakage from seams and fixtures. The results of each inspection will be entered into the Operating Record.

7.4.6 Loading/Unloading Areas

The container and bulk loading and unloading areas at least once each operating day will be inspected for signs of spillage. The

dikes, base, foundation, and warning signs of the loading and unloading areas will be visually inspected for evidence of cracks, spalling, deterioration and damage on a weekly basis. The results of each inspection and the nature of any repairs will be entered into the Operating Record.

7.4.7 Emergency Equipment Inspection

[40 CFR Section 264.15(b)]

This section will address the frequency and type of inspections to be conducted with regard to communication and alarm systems, fire extinguishing equipment, safety equipment and spill control equipment.

7.4.7.1 Fire Extinguishing Equipment

- (1) At least once each month, all portable fire extinguishers on-site will be visually inspected in accordance with OSHA Standard 29 CFR 1910.157(3)(2), and NFPA Standard 10 entitled, "Standard for Portable Fire Extinguishers", Section 4-3. These monthly inspections will determine: if all extinguishers are in their designated places; if each such

extinguisher is clearly visible; if the operating instructions on each extinguisher are legible; if any seals or tamper indicators are broken or missing; if any signs of physical damage, corrosion, leakage, or clogged nozzles are obvious; and if pressure gauge readings are in operating ranges.

- (2) At least annually, each portable fire extinguisher will be subjected to an annual maintenance check in accordance with OSHA Standard 29 CFR 1910.157(e)(3), and NFPA Standard 10, Section 4-4. Each extinguisher will be hydrostatically tested in accordance with the schedule set forth in 29 CFR 1910.157(f), Table L-1 and/or NFPA Standard 10, Table 5-3.

7.4.7.2 Protective Equipment

At least once each month, all protective equipment maintained on-site (protective glasses, gloves, respirators, etc.) will be inventoried and checked for full operational status.

Communications and alarm systems will be inspected and tested for proper functioning. (Refer to the Operating Record.)

7.4.7.3 Spill Clean-Up Equipment

At least once each month, all spill clean-up equipment (shovels, absorbent, etc.) will be inventoried and checked for operational status.

The results of each such inspection in this section will be entered into the Operating Record.

7.5 Preventive Maintenance [40 CFR Section 264.15(a)]

As stated in the Introduction to this Plan, its purpose is to establish an inspection routine to detect malfunctions, deterioration, leaks, and discharges. This Plan shall not be used as a substitute for a routine preventative maintenance plan for facility equipment required to maintain the facility in top operational condition.

7.6 Containment Area Accumulation

If subsequent to inspections, or if at any other time, it is observed that liquids have accumulated in any of the secondary containment areas, the situation will be handled as follows:

- (a) If the exact source of the leaked or spilled material can readily be determined, the material will be identified accordingly, and transferred to an appropriate container.
- (b) If the source or identity of the spill cannot be determined, a sample will be collected and analyzed to see if it exhibits any of the four characteristics of a hazardous waste (ignitability, corrosivity, reactivity or EP toxicity), or to see if it contains any of the hazardous constituents (40 CFR 261, Appendix VII) of any listed wastes stored in the particular containment area. Test methods will be as described in Section 5.3.3.

In either case (a) or (b) above, any accumulated liquids in secondary containment areas will be removed as soon as possible to preclude any possibility of overflow.

7.7 Surface Impoundments Inspection

[40 CFR Section 264.226]

Not applicable to MacDermid, Inc.

7.8 Waste Pile Inspection

[40 CFR Sections 264.253 and 264.254]

Not applicable to MacDermid, Inc.

7.9 Landfill Inspection

[40 CFR Section 264.303]

Not applicable to MacDermid, Inc.

7.10 Incinerator Inspection

[40 CFR Section 264.347]

Not applicable to MacDermid, Inc.

7.11 Recordkeeping

[40 CFR Sections 264.15(b) and (d)]

Hazardous waste storage facility inspection records of MacDermid, Inc. will be kept on-site for three years from the date of inspection. These records will include the date and time of the inspection, the name of the inspector, the type of problem found, and the date and type of any repair performed.

All inspection records must be periodically updated and entered into a Facility Operating Record.

Sample inspection record forms are included as Figure 7.1 and are included in Section 11.0, the Operating Record.

HUNTINGDON AVENUE
SHIPPING/RECEIVING - INSPECTION CHECKLIST

OK = \checkmark Problem = χ^*

[illegible]

Figure 7.1 (cont)

WEEKLY INSPECTION LOG SHEETS

DATE - FROM: _____ TO: _____

INSPECTOR'S NAME: _____

INSPECTOR'S TITLE: _____

SAFETY AND EMERGENCY EQUIPMENT						(D) Daily Inspection	(M) Monthly Inspection
ITEM	TYPES OF PROBLEMS	DATE/TIME OF INSPECTION	Accept.	Unaccept.	OBSERVATIONS	DATE AND NATURE OF REPAIRS/REMEDIAL ACTION	
Fire Alarm System	Power failure						
Absorbent Material	Out of stock						
Oxygen Masks	Broken or Dirty						
Emergency shower and eye wash	Water pressure, leaking, drainage						
Water and Air Pumps	Power, clogging						
Goggles and Protective Glasses (M)	Broken or dirty equipment						
Fire extinguishers (M)	Needs recharging						
Rubber Gloves	Out of Stock						
Telephone system (M)	Power failure						
CB's	Battery failure						
First aid equipment and supplies(M)	Items out of stock or inoperative						
Shovels	Condition/out of stock						
Chemical Suits	Out of Stock/Wear and Tear						

Figure 7.1 cont

WEEKLY INSPECTION LOG SHEETS

DATE - FROM: _____ TO: _____

INSPECTOR'S NAME: _____

INSPECTOR'S TITLE: _____

		SAFETY AND EMERGENCY EQUIPMENT			(D) Daily Inspection		(M) Monthly Inspection		DATE AND NATURE OF REPAIRS/REMEDIAL ACTION
ITEM	TYPES OF PROBLEMS	DATE/TIME OF INSPECTION	Accept.	Unaccept.	OBSERVATIONS				
Scott Air Pack	Air Delivery system, air quantity in reserve								
5 - Minute Life Line	Air delivery system, air quantity in reserve								
Respirators/Cartridges	Out of Stock								

Figure 7.1 cont

MICRO STORAGE AREA

CONTAINER STORAGE AREA INSPECTION LOG SHEET - WEEKLY

MAGDERMID:

Inspector's Name/Title _____

Date of Inspection _____

Time of Inspection _____

ACCEPTABLE: Y = Yes

N = No

	BERM AREA	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	OBSERVATION
Sealing of Containers - Bungs/Rings Closed							
Labeling of Containers (Waste labels, ID and date furnished)							
Containers (Corrosion, leakage, structural defects)							
Storage Area Leaks, spills							
2' Aisle space between totes/drums height of stacks							
Pallets Damaged (e.g. broken wood, warping, nails missing)							
Base or Foundation (Cracks, spalling, uneven settlement)							
Above 2nd Tier Drums Strapped (Required)							
Fire Extinguishers (Charged)							
Sprinkler System (Water pressure, leaks, damaged)							
Emergency Eye Wash/Shower (Water pressure, leaking, draining)							

Give date and how problem was rectified:

Figure 7.1 cont.

Flammable Material Storage Area

CONTAINER STORAGE AREA INSPECTION LOG SHEET - WEEKLY

MACDERMID:

Inspector's Name/Title _____

Date of Inspection _____

Time of Inspection _____

ACCEPTABLE: Y = Yes

N = No

	BERM AREA	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	OBSERVATION
Racks in good condition - Sagging, sway							
Sealing of Containers - Bungs/Rings Closed							
Labeling of Containers (Waste labels, ID and date furnished)							
Containers (Corrosion, leakage, structural defects)							
Storage Material Compatible							
2' Aisle space between totes/drums							
Pallets Damaged (e.g. broken wood, warping, nails missing)							
Base or Foundation (Cracks, spalling, uneven settlement)							
Above 2nd Tier Drums Strapped (Required)							
Fire Extinguishers (Charged)							
Sprinkler System (Water pressure, leaks, damaged)							
Emergency Eye Wash/Shower (Water pressure, leaking, draining)							
Give date and how problem was rectified:							

Main Container Storage Area

CONTAINER STORAGE AREA INSPECTION LOG SHEET - WEEKLY

MACDERMID:

Inspector's Name/Title _____

Date of Inspection _____

Time of Inspection _____

ACCEPTABLE: Y = Yes

N = No

	BERM AREA	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	OBSERVATION
Sealing of Containers - Bungs/Rings Closed							
Labeling of Containers (Waste labels, ID and date furnished)							
Containers (Corrosion, leakage, structural defects)							
Storage Area Leaks, spills							
2' Aisle space between totes/drums height of stacks							
Pallets Damaged (e.g. broken wood, warping, nails missing)							
Base or Foundation (Cracks, spalling, uneven settlement)							
Above 2nd Tier Drums Strapped (Required)							
Fire Extinguishers (Charged)							
Sprinkler System (Water pressure, leaks, damaged)							
Emergency Eye Wash/Shower (Water pressure, leaking, draining)							
Give date and how problem was rectified:							

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MACDERMID: WASTE STORAGE TANKS
WEEKLY INSPECTION LOG SHEET

Inspector's Name/Title _____

Date of Inspection _____

Time of Inspection _____

Acceptable: Y = Yes
N = No

ITEM	TYPES OF PROBLEMS	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	OBSERVATIONS
Base of Foundation	Cracks, spalling, uneven settlement, erosion, wet spots, sealant: deterioration						
Warning Signs	Good condition						
Pipes/Valves/Fittings	Loss of metal thickness, leaks, corrosion or deterioration						
Level Gages	Working order						
Drainage System	Sump Drains - Clear/Free Evidence of spilled material						
Block Wall	Cracks, sealant deterioration						
Tank Shell	Cracks, corrosion, discoloration, bulges, buckles						
Area Around Tank	Spotting indicating leaks						
***Give date and how problem rectified							

WASTE STORAGE TANKS

Daily (In-Use) Inspection

Non-Overflow*

[illegible]

Figure 7.1 cont.

TANK LEVEL-CAPACITOR

$$OK = \checkmark \quad No = X$$

*If gage not working properly, write in here date, problem and how fixed.

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HUNTINGDON AVENUE SECURITY FENCE AND GATES
MONTHLY INSPECTION LOG BY - MAINTENANCE MANAGER

Entire perimeter fence, including all gates and locks, to be inspected monthly for integrity, corrosion, hinge and lock operation and unnecessary openings. Records to be retained for 3 years.

DATE/TIME	Problems Observed (specify location)	Remedial Action to be taken. By whom and when?	Date Completed
Jan:			
Feb:			
Mar:			
April:			
May:			
June:			
July:			
Aug:			
Sept:			
Oct:			
Nov:			
Dec:			

Figure 7.1 cont.

